

ISOTHERMS AND THERMODYNAMIC PROPERTIES
OF KRYPTON AT TEMPERATURES
BETWEEN 0° AND 150°C AND AT DENSITIES
UP TO 620 AMAGAT

by N. J. TRAPPENIERS, T. WASSENAAR and G. J. WOLKERS

182th publication of the Van der Waals Fund
Van der Waalslaboratorium, Universiteit van Amsterdam, Amsterdam, Nederland

Synopsis

The compressibility isotherms of krypton are given at temperatures from 0° up to 150°C and at densities up to 620 amagat, the maximum pressure being about 3000 atmospheres.

From these results values of energy, entropy, enthalpy, free energy, free enthalpy, kinetic energy, specific heat, sound velocity and Joule-Thomson coefficient have been calculated. The data are presented at integral values of density.

1. *Introduction.* Measurements of P-V-T-data of krypton have been carried out in the temperature region from 0° to 150°C and at pressures up to 2900 atmospheres. The apparatus and method have been described in previous publications¹⁾.

The krypton gas used was analysed in a mass-spectrometer; impurities, mainly xenon, were less than 10 p.p.m.

Based on these isotherms thermodynamical properties as a function of density have been calculated, using methods described earlier²⁾.

2. *Results of P-V-T-data.* Six series of measurements were carried out with different normal volumes. The experimental results, adjusted to equal densities and integral temperatures are presented in table I. Pressures are expressed in standard atmospheres, temperatures in degrees centigrade, densities and PV products in amagat. For krypton a density of 1 amagat equals 4.4738×10^{-5} mol/cm³, while a PV product of 1 amagat equals 2264.85 J/mol.

A polynomial

$$PV = A + B\rho + C\rho^2 + Z\rho^3 + D\rho^4 + Y\rho^5 + E\rho^6$$

was fitted to each isotherm by means of least squares. The coefficients of these polynomials are given in table II; the residuals ($PV_{\text{exp}} - PV_{\text{calc}}$)

TABLE I

		Experimental <i>PV</i> - and					
	t ρ	0°		25°		50°	
		<i>PV</i>	<i>P</i>	<i>PV</i>	<i>P</i>	<i>PV</i>	<i>P</i>
		<i>a</i> ₁	19.5216	0.95104	18.5658	1.04821	20.4627
<i>a</i> ₂	24.3926	0.93865	22.8961	1.03726	25.3015	1.13561	27.7005
<i>a</i> ₃	29.3772	0.92629	27.2118	1.02628	30.1492	1.12583	33.0737
<i>a</i> ₄	34.3240	0.91420	31.3790	1.01553	34.8571	1.11639	38.3190
<i>a</i> ₅	39.5492	0.90176	35.6639	1.00462	39.7319	1.10679	43.7727
<i>b</i> ₁	40.1408	0.90038	36.1420	1.00334	40.2749	1.10578	44.3869
<i>a</i> ₆	44.7617	0.88966	39.8227	0.99387	44.4873	1.09748	49.1251
<i>a</i> ₇	49.9236	0.87788	43.8269	0.98354	49.1019	1.08852	54.3428
<i>b</i> ₂	51.2356	0.87491	44.8265	0.98099	50.2616	1.08622	55.6531
<i>a</i> ₈	55.2752	0.86594	47.8650	0.97311	53.7888	1.07949	59.6690
<i>b</i> ₃	62.7978	0.84970	53.3593	0.95895	60.2200	1.06732	67.0253
<i>b</i> ₄	73.9152	0.82675	61.1094	0.93910	69.4138	1.05037	77.6383
<i>c</i> ₁	80.9655	0.81271	65.8015	0.92700	75.0550	1.04028	84.2268
<i>b</i> ₅	85.2626	0.80463	68.6048	0.92001	78.4424	1.03424	88.1820
<i>b</i> ₆	95.1905	0.78637	74.8550	0.90443	86.0931	1.02129	97.2171
<i>c</i> ₂	103.347	0.77193	79.7766	0.89227	92.2134	1.01141	104.526
<i>b</i> ₇	104.099	0.77086	80.2458	0.89138	92.7918	1.01060	105.202
<i>b</i> ₈	108.909	0.76283	83.0791	0.88462	96.3431	1.00513	109.468
<i>c</i> ₃	126.672	0.73495	93.0976	0.86156	109.136	0.98695	125.019
<i>d</i> ₁	139.475	0.71701	100.005	0.84707	118.145	0.97585	136.107
<i>c</i> ₄	149.101	0.70461	105.058	0.83729	124.841	0.96884	144.455
<i>c</i> ₅	171.996	0.67885	116.759	0.81794	140.682	0.95598	164.425
<i>d</i> ₂	178.037	0.67303	119.824	0.81389	144.903	0.95361	169.778
<i>c</i> ₆	192.028	0.66079	126.890	0.80572	154.721	0.94978	182.384
<i>c</i> ₇	210.004	0.64822	136.129	0.79871	167.732	0.94853	199.195
<i>d</i> ₃	218.231	0.64374	140.484	0.79691	173.910	0.94931	207.169
<i>c</i> ₈	219.711	0.64289	141.250	0.79650	175.000	0.94956	208.629
<i>e</i> ₁	229.953	0.63858	146.843	0.79552	182.932	0.95206	218.929
<i>d</i> ₄	256.888	0.63278	162.554	0.79966	205.423	0.96611	248.182
<i>f</i> ₁	282.138	0.63601	179.443	0.81308	229.401	0.98991	279.291
<i>e</i> ₂	293.565	0.64063	188.067	0.82271	241.519	1.00456	294.904
<i>d</i> ₅	296.358	0.64199	190.259	0.82548	244.638	1.00854	298.889
<i>d</i> ₆	330.909	0.67136	222.159	0.87218	288.612	1.07237	354.857
<i>e</i> ₃	359.920	0.71544	257.501	0.93297	335.795	1.14965	413.782
<i>f</i> ₂	360.244	0.71584	257.877	0.93354	336.302	1.15050	414.461
<i>d</i> ₇	361.932	0.71933	260.349	0.93805	339.510	1.15587	418.346
<i>d</i> ₈	378.694	0.75553	286.115	0.98504	373.029	1.21314	459.409
<i>e</i> ₄	423.838	0.89904	381.047	1.16096	492.059	1.42005	601.871
<i>f</i> ₃	441.832	0.97841	432.293	1.25471	554.371	1.52722	674.775
<i>e</i> ₅	489.300	1.26709	619.987	1.58469	775.389	1.89668	928.046
<i>f</i> ₄	520.674	1.53447	798.959	1.88204	979.929	2.22220	1157.04
<i>e</i> ₆	546.898	1.81492	992.576	2.18858	1196.93	2.55366	1396.59
<i>e</i> ₇	599.002	2.55310	1529.31	2.98220	1786.34	3.39913	2036.09
<i>f</i> ₅	601.962	2.60411	1567.58	3.03636	1827.77	3.45626	2080.54
<i>e</i> ₈	627.375	3.07442	1928.81	3.53609	2218.45	3.98356	2499.19

P-values of krypton							
75°		100°		125°		150°	
PV	P	PV	P	PV	P	PV	P
1.24200	24.2458	1.33862	26.1320	1.43511	28.0156	1.53145	29.8964
1.23357	30.0900	1.33138	32.4758	1.42902	34.8575	1.52657	37.2370
1.22515	35.9915	1.32422	38.9019	1.42298	41.8032	1.52162	44.7009
1.21697	41.7713	1.31725	45.2133	1.41728	48.6467	1.51706	52.0716
1.20868	47.8023	1.31023	51.8185	1.41150	55.8237	1.51253	59.8194
1.20779	48.4817	1.30948	52.5636	1.41087	56.6335	1.51205	60.6949
1.20065	53.7431	1.30343	58.3437	1.40601	62.9354	1.50827	67.5127
1.19299	59.5584	1.29704	64.7529	1.40084	69.9350	1.50429	75.0996
1.19104	61.0236	1.29542	66.3716	1.39949	71.7037	1.50325	77.0199
1.18526	65.5155	1.29067	71.3420	1.39576	77.1509	1.50048	82.9393
1.17503	73.7893	1.28228	80.5244	1.38917	87.2368	1.49562	93.9216
1.16094	85.8111	1.27095	93.9425	1.38050	102.040	1.48963	110.106
1.15263	93.3233	1.26445	102.377	1.37585	111.396	1.48672	120.373
1.14770	97.8559	1.26053	107.476	1.37288	117.055	1.48476	126.594
1.13734	108.264	1.25266	119.241	1.36746	130.169	1.48181	141.054
1.12958	116.739	1.24706	128.880	1.36407	140.973	1.48051	153.006
1.12897	117.525	1.24663	129.773	1.36370	141.960	1.48026	154.094
1.12474	122.494	1.24363	135.442	1.36197	148.331	1.47975	161.158
1.11128	140.768	1.23492	156.430	1.35798	172.018	1.48046	187.533
1.10368	153.936	1.23077	171.662	1.35724	189.301	1.48312	206.858
1.09934	163.913	1.22913	183.265	1.35830	202.524	1.48688	221.695
1.09305	188.000	1.22942	211.455	1.36519	234.807	1.50030	258.046
1.09250	194.505	1.23063	219.098	1.36816	243.583	1.50507	267.958
1.09295	209.877	1.23545	237.241	1.37735	264.490	1.51855	291.604
1.09750	230.479	1.24582	261.627	1.39353	292.647	1.54031	323.471
1.10104	240.281	1.25209	273.245	1.40233	306.032	1.55200	338.695
1.10179	242.075	1.25338	275.381	1.40433	308.547	1.55445	341.530
1.10779	254.740	1.26292	290.412	1.41736	325.926	1.57128	361.321
1.13179	290.743	1.29694	333.168	1.46136	375.406	1.62488	417.412
1.16613	329.010	1.34162	378.522	1.51629	427.803	1.68993	476.793
1.18587	348.130	1.36627	401.890	1.54580	453.793	1.72425	506.179
1.19100	352.962	1.37263	406.790	1.55336	460.351	1.73312	513.624
1.27164	420.797	1.46983	486.380	1.66683	551.569	1.86220	616.219
1.36490	491.255	1.57839	568.094	1.79039	644.397	2.00099	720.196
1.36594	492.072	1.57945	568.987	1.79179	645.482	2.00233	721.327
1.37221	496.647	1.58703	574.397	1.79995	651.460	2.01139	727.986
1.43952	545.138	1.66404	630.162	1.88637	714.357	2.10698	797.901
1.67623	710.450	1.92939	817.749	2.17997	923.954	2.42781	1029.00
1.79712	794.025	2.06244	911.252	2.32519	1027.34	2.58488	1142.08
2.20308	1077.97	2.50438	1225.39	2.80121	1370.63	3.09421	1514.00
2.55540	1330.53	2.88275	1500.97	3.20445	1668.47	3.52085	1833.22
2.91030	1591.64	3.26017	1782.98	3.60305	1970.50	3.94026	2154.92
3.80533	2279.40	4.20249	2517.30	4.59043	2749.68	4.97104	2977.66
3.86458	2326.33	4.26436	2566.98	4.65482	2802.02	5.03709	3032.14
4.41940	2772.62						

TABLE II

Coefficients of the polynomial $PV = A + B\rho + C\rho^2 + Z\rho^3 + D\rho^4 + Y\rho^5 + E\rho^6$.							
$t \backslash \rho$	0°	25°	50°	75°	100°	125°	150°
$A = RT$	1.00274	1.09451	1.18629	1.27807	1.36984	1.46162	1.55339
$B \cdot 10^3$	-2.706612	-2.437974	-2.180304	-1.935331	-1.680628	-1.442021	-1.210137
$C \cdot 10^6$	3.523657	3.910667	4.140704	4.411084	4.174241	4.184117	4.198886
$Z \cdot 10^8$	1.617686	1.131008	0.8526953	0.5748746	0.7748834	0.7889197	0.8225052
$D \cdot 10^{11}$	-7.324110	-5.198864	-3.832113	-2.434649	-2.824926	-2.545547	-2.360108
$Y \cdot 10^{13}$	1.389757	1.087032	0.8928847	0.6799133	0.7560712	0.7187255	0.6952948
$E \cdot 10^{17}$	-6.186292	-4.709630	-3.791145	-2.684931	-3.285294	-3.181857	-3.151615
Range of ρ	0-627	0-627	0-627	0-627	0-602	0-602	0-602

are given in table III. The polynomials and their respective residual curves can be used for interpolation purposes. In this way table IV is calculated, where PV -values at integral densities are presented.

Separate polynomials $PV = A + B\rho + C\rho^2$ were calculated from the data with amagat densities below 50. These coefficients are given in table V. From the B -values in this table the parameters in the Lennard-Jones 12-6 potential have been calculated. The results were

$$\varepsilon/k = 164.41^\circ\text{K}$$

$$\sigma = 3.685 \times 10^{-8} \text{ cm}$$

the reduced temperature range being from $T^* = 1.66$ to $T^* = 2.57$.

3. *Thermodynamic functions.* In tables VI to XVII are given the results for internal energy U_i , energy U , internal entropy S_i , entropy S , enthalpy H , free energy F , free enthalpy G , internal kinetic energy ΔK , specific heat C_v and C_p , sound velocity c and Joule-Thomson coefficient μ .

TABLE III

$\Delta = (PV_{\text{exp.}} - PV_{\text{calc.}}) \cdot 10^5$ of krypton								
	t	0°	25°	50°	75°	100°	125°	150°
	p							
a_1	19.5216	-32	-27	-13	-1	-6	-1	+3
a_2	24.3926	-38	-26	-7	+1	-5	-2	+9
a_3	29.3772	-34	-23	-17	0	-3	-7	-4
a_4	34.3240	-35	-30	-24	-7	-10	-6	-4
a_5	39.5492	-28	-17	-19	-5	-9	-7	-3
b_1	40.1408	-26	-22	-12	-2	-6	-6	-1
a_6	44.7617	-17	-17	-14	-6	-14	-6	-2
a_7	49.9236	-12	-12	-9	-4	-11	-6	-5
b_2	51.2356	-12	-8	-14	-8	-14	-14	-13
a_8	55.2752	-8	-7	-6	-9	-11	-7	-5
b_3	62.7978	+3	+2	+2	-1	-3	-2	-7
b_4	73.9152	+18	+18	+12	+8	+8	+3	-2
c_1	80.9655	+11	+11	+20	+10	+17	+22	+20
b_5	85.2626	+29	+20	+10	+0	+0	-6	-13
b_6	95.1905	+37	+26	+15	+5	+5	-6	-11
c_2	103.3468	+21	+17	+18	+7	+14	+18	+17
b_7	104.0988	+42	+36	+24	+14	+20	+10	+3
b_8	108.9091	+45	+36	+25	+13	+18	+11	+3
c_3	126.6721	+22	+17	+18	+6	+18	+19	+21
d_1	139.475	+17	+12	+4	-5	+5	+2	+1
c_4	149.101	+11	+6	+10	+3	+14	+15	+20
c_5	171.996	-13	-13	-11	-12	-8	-4	-1
d_2	178.037	-12	-6	-14	-12	-13	-14	-10
c_6	192.028	-28	-25	-20	-15	-14	-7	-2
c_7	210.004	-35	-28	-16	-4	-6	+3	-9
d_3	218.231	-26	-15	-18	-4	-12	-26	-24
c_8	219.711	-37	-30	-17	-3	-8	-2	-4
e_1	229.953	-21	-25	-15	-7	-17	-17	+7
d_4	256.888	-17	-4	+0	+1	-11	-8	-11
f_1	282.138	-5	-5	-3	+11	+5	+13	+14
e_2	293.565	+7	+0	-4	+12	+1	+4	+2
d_5	296.358	+1	+7	-5	-1	-12	-12	-4
d_6	330.909	+25	+27	+17	+7	+13	+19	-7
e_3	359.920	+32	+27	+33	+21	+23	+17	+34
f_2	360.244	+11	+3	+18	+6	-8	+2	-4
d_7	361.932	+38	+28	+28	+8	+31	+7	+0
d_8	378.694	+27	+22	+15	-8	+22	-5	-16
e_4	423.838	+12	+5	-2	-30	-2	+12	+14
f_3	441.832	-29	-28	-54	-7	-17	+6	+20
e_5	489.300	-64	-58	-44	-48	-68	-77	-61
f_4	520.674	-43	-20	-5	+17	+4	+21	+4
e_6	546.898	+33	+38	+63	+90	+56	+35	+27
e_7	599.002	+1	-12	-34	-31	+9	+15	+60
f_5	601.962	+83	+55	+21	-61	-23	-25	-62
e_8	627.375	-54	-31	-3	+40			

TABLE IV

PV-values of krypton at integral densities							
t ρ	0°	25°	50°	75°	100°	125°	150°
0	1.00274	1.09451	1.18629	1.27807	1.36984	1.46162	1.55339
20	0.94980	1.04716	1.14427	1.24115	1.33789	1.43447	1.53089
40	0.90071	1.00363	1.10600	1.20798	1.30964	1.41102	1.51213
60	0.85566	0.96414	1.07176	1.17880	1.28535	1.39155	1.49739
80	0.81469	0.92868	1.04156	1.15369	1.26519	1.37627	1.48693
100	0.77782	0.89723	1.01541	1.13270	1.24927	1.36537	1.48095
120	0.74501	0.86980	0.99336	1.11593	1.23771	1.35901	1.47970
140	0.71631	0.84651	0.97550	1.10349	1.23071	1.35735	1.48339
160	0.69168	0.82739	0.96196	1.09557	1.22843	1.36068	1.49231
180	0.67117	0.81256	0.95295	1.09243	1.23119	1.36932	1.50686
200	0.65483	0.80218	0.94873	1.09442	1.23945	1.38380	1.52751
220	0.64281	0.79650	0.94961	1.10191	1.25359	1.40457	1.55482
240	0.63532	0.79585	0.95600	1.11536	1.27410	1.43215	1.58944
260	0.63269	0.80067	0.96841	1.13538	1.30174	1.46733	1.63211
280	0.63540	0.81156	0.98752	1.16271	1.33724	1.51093	1.68369
300	0.64410	0.82924	1.01414	1.19824	1.38154	1.56388	1.74520
320	0.65963	0.85464	1.04927	1.24298	1.43571	1.62732	1.81774
340	0.68305	0.88884	1.09406	1.29814	1.50098	1.70247	1.90260
360	0.71559	0.93316	1.14981	1.36507	1.57872	1.79074	2.00122
380	0.75871	0.98906	1.21806	1.44527	1.67045	1.89373	2.11519
400	0.81411	1.05826	1.30047	1.54050	1.77794	2.01319	2.24629
420	0.88371	1.14268	1.39900	1.65263	1.90311	2.15102	2.39644
440	0.96968	1.24445	1.51575	1.78378	2.04809	2.30932	2.56769
460	1.07440	1.36590	1.65306	1.93621	2.21511	2.49033	2.76229
480	1.20044	1.50958	1.81347	2.11240	2.40662	2.69649	2.98264
500	1.35064	1.67825	1.99965	2.31505	2.62523	2.93035	3.23124
520	1.52798	1.87486	2.21443	2.54702	2.87373	3.19468	3.51080
540	1.73563	2.10239	2.46076	2.81119	3.15497	3.49227	3.82399
560	1.97663	2.36375	2.74140	3.11006	3.47152	3.82564	4.17345
580	2.25377	2.66196	3.05942	3.44699	3.82646	4.19775	4.56205
600	2.57035	3.00051	3.41846	3.82554	4.22319	4.61195	4.99299
620	2.93012	3.38314	3.82218	4.24947			

TABLE V

Coefficients of the polynomial $PV = A + B\rho + C\rho^2$. Range 0-50 amagat							
t ρ	0°	25°	50°	75°	100°	125°	150°
$A = RT$	1.00274	1.09451	1.18629	1.27807	1.36984	1.46162	1.55339
$B \cdot 10^8$	-2.74744	-2.46744	-2.19963	-1.94138	-1.69183	-1.45320	-1.21838
$C \cdot 10^6$	4.93036	4.90194	4.82625	4.74166	4.68052	4.72274	4.70892

TABLE VI

Internal energy U_t of krypton in $\text{J}\cdot\text{mol}^{-1}$							
t p	0°	25°	50°	75°	100°	125°	150°
0	0	0	0	0	0	0	0
1	-13.3	-13.0	-12.7	-12.4	-12.1	-11.8	-11.6
20	-264.1	-257.3	-251.0	-245.0	-239.6	-234.5	-228.9
40	-524.1	-509.6	-496.6	-484.9	-474.5	-464.5	-455.6
60	-779.5	-756.9	-737.4	-720.0	-704.7	-690.4	-677.5
80	-1030.1	-999.3	-973.3	-950.6	-930.8	-912.5	-896.0
100	-1275.1	-1236.7	-1204.7	-1177.1	-1153.2	-1131.2	-1111.3
120	-1514.4	-1469.5	-1432.0	-1400.0	-1372.3	-1346.9	-1323.7
140	-1748.0	-1697.8	-1655.4	-1619.5	-1588.4	-1559.9	-1533.7
160	-1976.2	-1921.8	-1875.4	-1835.9	-1801.9	-1770.6	-1741.5
180	-2199.5	-2141.9	-2092.2	-2049.7	-2013.1	-1979.2	-1947.6
200	-2418.7	-2358.8	-2306.3	-2261.2	-2222.3	-2186.0	-2152.0
220	-2634.1	-2572.8	-2518.2	-2470.9	-2429.8	-2391.4	-2355.1
240	-2846.6	-2784.5	-2728.4	-2679.1	-2636.0	-2595.5	-2557.0
260	-3056.8	-2994.5	-2937.2	-2886.2	-2841.3	-2798.7	-2758.0
280	-3265.6	-3203.3	-3145.1	-3092.5	-3045.7	-3001.0	-2958.1
300	-3473.8	-3411.6	-3352.3	-3298.2	-3249.5	-3202.5	-3157.3
320	-3681.8	-3619.6	-3559.3	-3503.4	-3452.7	-3403.3	-3355.4
340	-3890.3	-3827.8	-3766.1	-3708.2	-3655.1	-3603.0	-3552.4
360	-4099.4	-4036.1	-3972.8	-3912.6	-3856.7	-3801.7	-3748.0
380	-4309.2	-4244.8	-4179.4	-4116.3	-4057.3	-3999.0	-3941.8
400	-4519.7	-4453.5	-4385.5	-4319.0	-4256.4	-4194.5	-4133.5
420	-4730.9	-4661.9	-4590.6	-4520.3	-4453.6	-4387.5	-4322.4
440	-4942.1	-4869.6	-4794.3	-4719.6	-4648.2	-4577.5	-4507.8
460	-5152.9	-5075.9	-4995.8	-4916.0	-4839.5	-4763.5	-4688.6
480	-5362.2	-5279.8	-5194.1	-5108.7	-5026.3	-4944.7	-4864.0
500	-5569.2	-5480.4	-5388.2	-5296.4	-5207.7	-5119.7	-5032.8
520	-5772.4	-5676.3	-5576.9	-5477.9	-5382.1	-5287.5	-5193.7
540	-5970.2	-5866.2	-5758.7	-5651.7	-5548.3	-5446.4	-5345.4
560	-6161.1	-6048.4	-5931.9	-5816.4	-5704.7	-5594.8	-5486.0
580	-6343.4	-6220.9	-6094.9	-5970.2	-5849.6	-5731.0	-5613.7
600	-6515.3	-6382.0	-6245.9	-6111.4	-5981.2	-5853.1	-5726.6
620	-6675.4	-6530.3	-6383.1	-6238.1			

TABLE VII

Energy U of krypton in $\text{J}\cdot\text{mol}^{-1}$							
t ρ	0°	25°	50°	75°	100°	125°	150°
0	+ 13.3	325.1	636.9	948.6	1260.5	1572.2	1884.0
1	0	312.1	624.2	936.2	1248.4	1560.4	1872.4
20	- 250.8	+ 67.8	385.9	703.6	1020.9	1337.7	1654.2
40	- 510.8	- 184.5	+ 140.3	463.7	786.0	1107.7	1428.4
60	- 766.2	- 431.8	- 100.5	+ 228.6	555.8	881.8	1206.5
80	-1016.8	- 674.2	- 336.4	- 2.0	329.7	659.7	988.0
100	-1261.8	- 911.6	- 567.8	- 228.5	+ 107.3	441.0	772.7
120	-1501.1	-1144.4	- 795.1	- 451.4	- 111.8	225.3	560.3
140	-1734.7	-1372.7	-1018.5	- 670.9	- 327.9	+ 12.3	350.3
160	-1962.9	-1596.7	-1238.5	- 887.3	- 541.4	- 198.4	+ 142.5
180	-2186.2	-1816.8	-1455.3	-1101.1	- 752.6	- 407.0	- 63.6
200	-2405.4	-2033.7	-1669.4	-1312.6	- 961.8	- 613.8	- 268.0
220	-2620.8	-2247.7	-1881.3	-1522.3	-1169.3	- 819.2	- 471.1
240	-2833.3	-2459.4	-2091.5	-1730.5	-1375.5	-1023.3	- 673.0
260	-3043.5	-2669.4	-2300.3	-1937.6	-1580.8	-1226.5	- 874.0
280	-3252.3	-2878.2	-2508.2	-2143.9	-1785.2	-1428.8	-1074.1
300	-3460.5	-3086.5	-2715.4	-2349.6	-1989.0	-1630.3	-1273.3
320	-3668.5	-3294.5	-2922.4	-2554.8	-2192.2	-1831.1	-1471.4
340	-3877.0	-3502.7	-3129.2	-2759.6	-2394.6	-2030.8	-1668.4
360	-4086.1	-3711.0	-3335.9	-2964.0	-2596.2	-2229.5	-1864.0
380	-4295.9	-3919.7	-3542.5	-3167.7	-2796.8	-2426.8	-2057.8
400	-4506.4	-4128.4	-3748.6	-3370.4	-2995.9	-2622.3	-2249.5
420	-4717.6	-4336.8	-3953.7	-3571.7	-3193.1	-2815.3	-2438.4
440	-4928.8	-4544.5	-4157.4	-3771.0	-3387.7	-3005.3	-2623.8
460	-5139.6	-4750.8	-4358.9	-3967.4	-3579.0	-3191.3	-2804.6
480	-5348.9	-4954.7	-4557.2	-4160.1	-3765.8	-3372.5	-2980.0
500	-5555.9	-5155.3	-4751.3	-4347.8	-3947.2	-3547.5	-3148.8
520	-5759.1	-5351.2	-4940.0	-4529.3	-4121.6	-3715.3	-3309.7
540	-5956.9	-5541.1	-5121.8	-4703.1	-4287.8	-3874.2	-3461.4
560	-6147.8	-5723.3	-5295.0	-4867.8	-4444.2	-4022.6	-3602.0
580	-6330.1	-5895.8	-5458.0	-5021.6	-4589.1	-4158.8	-3729.7
600	-6502.0	-6056.9	-5609.0	-5162.8	-4720.7	-4280.9	-3842.6
620	-6662.1	-6205.2	-5746.2	-5289.5			

TABLE VIII

Internal entropy S_t of krypton in $\text{J}\cdot\text{mol}^{-1}\cdot\text{deg}^{-1}$.							
$t \backslash p$	0°	25°	50°	75°	100°	125°	150°
0	0	0	0	0	0	0	0
1	- 0.026	- 0.025	- 0.024	- 0.023	- 0.022	- 0.021	- 0.021
20	- 0.520	- 0.496	- 0.475	- 0.457	- 0.442	- 0.429	- 0.418
40	- 1.041	- 0.989	- 0.946	- 0.912	- 0.884	- 0.858	- 0.835
60	- 1.561	- 1.481	- 1.416	- 1.366	- 1.324	- 1.287	- 1.255
80	- 2.081	- 1.971	- 1.886	- 1.819	- 1.765	- 1.718	- 1.676
100	- 2.596	- 2.461	- 2.355	- 2.274	- 2.209	- 2.151	- 2.102
120	- 3.108	- 2.949	- 2.826	- 2.732	- 2.656	- 2.590	- 2.532
140	- 3.615	- 3.438	- 3.299	- 3.193	- 3.108	- 3.033	- 2.968
160	- 4.120	- 3.928	- 3.776	- 3.659	- 3.566	- 3.484	- 3.412
180	- 4.624	- 4.420	- 4.257	- 4.132	- 4.031	- 3.943	- 3.864
200	- 5.129	- 4.918	- 4.746	- 4.613	- 4.506	- 4.411	- 4.327
220	- 5.638	- 5.421	- 5.243	- 5.103	- 4.990	- 4.890	- 4.800
240	- 6.153	- 5.934	- 5.750	- 5.605	- 5.487	- 5.380	- 5.286
260	- 6.678	- 6.458	- 6.270	- 6.120	- 5.997	- 5.885	- 5.785
280	- 7.215	- 6.996	- 6.805	- 6.650	- 6.521	- 6.404	- 6.299
300	- 7.769	- 7.551	- 7.356	- 7.197	- 7.063	- 6.940	- 6.829
320	- 8.342	- 8.124	- 7.926	- 7.762	- 7.622	- 7.492	- 7.375
340	- 8.938	- 8.720	- 8.517	- 8.346	- 8.200	- 8.064	- 7.940
360	- 9.559	- 9.338	- 9.131	- 8.953	- 8.799	- 8.655	- 8.523
380	-10.208	- 9.983	- 9.769	- 9.582	- 9.419	- 9.267	- 9.127
400	-10.886	-10.655	-10.432	-10.235	-10.062	- 9.900	- 9.752
420	-11.596	-11.355	-11.122	-10.914	-10.729	-10.557	-10.398
440	-12.340	-12.086	-11.840	-11.619	-11.421	-11.237	-11.066
460	-13.118	-12.848	-12.587	-12.351	-12.138	-11.941	-11.758
480	-13.931	-13.643	-13.363	-13.109	-12.882	-12.669	-12.472
500	-14.780	-14.470	-14.169	-13.896	-13.651	-13.422	-13.209
520	-15.665	-15.329	-15.005	-14.711	-14.446	-14.199	-13.970
540	-16.585	-16.222	-15.871	-15.553	-15.267	-15.002	-14.755
560	-17.540	-17.146	-16.767	-16.423	-16.114	-15.828	-15.563
580	-18.530	-18.101	-17.692	-17.321	-16.987	-16.678	-16.392
600	-19.554	-19.089	-18.646	-18.246	-17.885	-17.551	-17.243
620	-20.614	-20.108	-19.629	-19.197			

TABLE IX

Entropy S of krypton in $\text{J}\cdot\text{mol}^{-1}\cdot\text{deg}^{-1}$.							
t ρ	0°	25°	50°	75°	100°	125°	150°
0	∞	∞	∞	∞	∞	∞	∞
1	0	+ 1.093	+ 2.099	+ 3.029	+ 3.894	+ 4.704	+ 5.464
20	-25.401	-24.285	-23.260	-22.313	-21.434	-20.611	-19.841
40	-31.685	-30.542	-29.494	-28.531	-27.638	-26.803	-26.021
60	-35.577	-34.405	-33.336	-32.356	-31.449	-30.604	-29.812
80	-38.488	-37.287	-36.197	-35.201	-34.283	-33.426	-32.625
100	-40.859	-39.632	-38.522	-37.511	-36.581	-35.715	-34.906
120	-42.887	-41.636	-40.509	-39.485	-38.544	-37.669	-36.852
140	-44.676	-43.407	-42.263	-41.228	-40.278	-39.394	-38.570
160	-46.290	-45.006	-43.850	-42.804	-41.846	-40.955	-40.123
180	-47.774	-46.478	-45.311	-44.257	-43.291	-42.393	-41.556
200	-49.155	-47.852	-46.675	-45.613	-44.641	-43.738	-42.894
220	-50.456	-49.147	-47.965	-46.896	-45.918	-45.008	-44.160
240	-51.695	-50.384	-49.196	-48.122	-47.138	-46.223	-45.369
260	-52.885	-51.574	-50.381	-49.302	-48.314	-47.393	-46.534
280	-54.038	-52.728	-51.532	-50.448	-49.455	-48.528	-47.664
300	-55.166	-53.856	-52.657	-51.568	-50.569	-49.637	-48.767
320	-56.276	-54.966	-53.764	-52.669	-51.665	-50.727	-49.850
340	-57.376	-56.066	-54.859	-53.759	-52.748	-51.802	-50.919
360	-58.472	-57.159	-55.947	-54.840	-53.821	-52.868	-51.978
380	-59.570	-58.253	-57.035	-55.919	-54.891	-53.930	-53.031
400	-60.675	-59.352	-58.124	-56.998	-55.961	-54.990	-54.082
420	-61.791	-60.458	-59.220	-58.083	-57.033	-56.052	-55.134
440	-62.921	-61.575	-60.325	-59.174	-58.112	-57.119	-56.189
460	-64.069	-62.707	-61.441	-60.276	-59.199	-58.192	-57.250
480	-65.236	-63.856	-62.572	-61.389	-60.296	-59.275	-58.318
500	-66.425	-65.022	-63.717	-62.515	-61.405	-60.367	-59.395
520	-67.636	-66.208	-64.879	-63.656	-62.526	-61.470	-60.482
540	-68.869	-67.414	-66.059	-64.812	-63.661	-62.587	-61.581
560	-70.127	-68.641	-67.257	-65.984	-64.810	-63.715	-62.690
580	-71.408	-69.888	-68.474	-67.174	-65.975	-64.857	-63.812
600	-72.714	-71.157	-69.710	-68.381	-67.155	-66.012	-64.945
620	-74.047	-72.448	-70.965	-69.604			

TABLE X

Enthalpy H of krypton in $\text{J}\cdot\text{mol}^{-1}$							
t ρ	0°	25°	50°	75°	100°	125°	150°
0	+ 19.5	539.1	1058.8	1578.4	2098.1	2617.7	3137.4
1	0	520.6	1041.1	1561.7	2082.2	2602.6	3123.0
20	- 364.5	+ 174.6	712.7	1249.8	1786.2	2321.7	2856.6
40	- 735.7	- 176.3	380.3	934.7	1487.3	2038.6	2588.3
60	-1093.2	- 513.0	+ 62.1	633.5	1202.1	1768.6	2333.0
80	-1436.5	- 835.7	- 242.3	346.1	930.3	1511.9	2090.9
100	-1765.1	-1144.4	- 532.9	+ 72.0	671.8	1268.5	1862.0
120	-2078.6	-1439.3	- 810.1	- 188.8	426.6	1038.4	1646.7
140	-2377.2	-1720.3	-1074.0	- 436.5	+ 194.6	821.7	1445.1
160	-2661.2	-1987.7	-1324.6	- 670.9	- 24.0	618.5	1257.5
180	-2931.0	-2241.4	-1561.9	- 891.7	- 229.0	429.5	1084.4
200	-3187.1	-2481.7	-1785.5	-1098.8	- 419.5	255.4	926.7
220	-3429.8	-2708.6	-1995.4	-1291.5	- 595.0	+ 97.1	785.5
240	-3659.3	-2921.7	-2191.1	-1469.2	- 754.7	- 44.6	662.0
260	-3875.4	-3120.8	-2371.8	-1631.0	- 897.4	-168.0	557.6
280	-4078.1	-3305.0	-2536.4	-1775.4	-1021.4	-271.6	474.3
300	-4266.5	-3473.2	-2683.4	-1900.6	-1124.9	-353.2	414.4
320	-4439.4	-3623.8	-2810.8	-2004.5	-1205.3	-410.3	380.6
340	-4594.8	-3754.4	-2916.2	-2084.4	-1260.0	-439.9	375.9
360	-4730.2	-3862.4	-2996.7	-2137.2	-1285.5	-438.6	403.6
380	-4842.4	-3944.5	-3048.6	-2159.2	-1278.4	-402.7	467.9
400	-4927.5	-3996.4	-3068.1	-2146.2	-1234.0	-327.6	573.2
420	-4981.0	-4013.6	-3050.1	-2093.5	-1147.7	-208.4	724.3
440	-4997.5	-3990.8	-2989.3	-1995.8	-1014.0	- 39.9	926.8
460	-4971.1	-3922.1	-2879.8	-1847.0	- 826.9	+184.1	1186.7
480	-4895.0	-3800.6	-2714.8	-1640.6	- 580.0	469.8	1510.4
500	-4761.7	-3619.2	-2487.2	-1369.4	- 266.3	824.4	1904.7
520	-4563.3	-3369.8	-2189.5	-1025.5	+ 122.1	1255.3	2376.9
540	-4290.8	-3044.4	-1813.4	- 601.0	592.8	1770.4	2934.5
560	-3935.9	-2634.6	-1351.0	- 88.8	1153.4	2377.1	3585.4
580	-3490.5	-2131.7	- 793.7	+ 520.4	1812.4	3083.7	4337.8
600	-2945.4	-1526.1	- 131.6	1236.9	2579.4	3899.6	5200.9
620	-2290.6	- 807.7	+ 645.6	2070.9			

TABLE XI

Free energy F of krypton in $\text{J}\cdot\text{mol}^{-1}$							
t p	0°	25°	50°	75°	100°	125°	150°
0	—∞	—∞	—∞	—∞	—∞	—∞	—∞
1	0	— 13.9	— 54.0	— 118.2	— 204.8	— 312.5	— 439.6
20	+6687.6	+7308.4	+7902.3	+8471.9	+9018.8	+9544.0	+10049.7
40	8144.0	8921.5	9671.4	10396.7	11099.0	11779.2	12439.3
60	8951.7	9826.0	10672.0	11493.3	12291.1	13066.6	13821.4
80	9496.3	10442.9	11360.7	12253.3	13122.3	13968.2	14793.4
100	9898.9	10904.5	11880.5	12831.0	13757.6	14660.8	15543.3
120	10213.5	11269.4	12295.2	13295.4	14271.0	15223.2	16154.3
140	10468.6	11569.0	12638.8	13682.7	14701.8	15697.2	16671.1
160	10681.4	11821.9	12931.6	14015.0	15073.5	16107.9	17120.7
180	10863.2	12040.7	13186.9	14306.9	15401.5	16471.9	17520.7
200	11021.3	12233.3	13413.6	14567.6	15696.1	16800.3	17882.5
220	11161.3	12405.7	13618.5	14804.5	15965.0	17100.9	18215.2
240	11287.2	12562.7	13806.1	15023.0	16214.2	17380.4	18524.9
260	11402.0	12707.3	13980.4	15227.0	16447.5	17643.0	18816.7
280	11508.2	12842.5	14144.4	15419.7	16668.8	17892.8	19094.8
300	11608.0	12970.6	14300.7	15603.8	16880.9	18132.7	19362.4
320	11703.2	13093.6	14451.3	15782.1	17086.6	18365.7	19622.7
340	11795.3	13213.3	14598.4	15956.4	17288.2	18594.2	19878.0
360	11885.5	13331.0	14743.4	16128.6	17487.2	18820.0	20130.4
380	11975.7	13448.6	14888.2	16300.4	17685.7	19045.3	20382.1
400	12067.0	13567.3	15034.2	16473.5	17885.7	19271.9	20635.4
420	12160.6	13688.7	15183.1	16649.8	18088.9	19501.8	20891.5
440	12258.2	13814.2	15336.6	16830.5	18296.9	19736.6	21152.6
460	12360.9	13945.4	15495.8	17017.6	18511.1	19977.9	21420.8
480	12470.4	14083.9	15662.8	17212.5	18733.8	20227.7	21697.4
500	12588.1	14231.0	15838.9	17416.8	18966.0	20487.4	21984.3
520	12715.6	14388.7	16025.8	17632.4	19210.0	20759.1	22283.3
540	12854.8	14558.4	16225.3	17861.2	19467.3	21044.7	22596.5
560	13007.4	14741.9	16439.1	18104.7	19739.7	21345.6	22925.4
580	13175.0	14941.3	16669.3	18365.0	20029.3	21664.0	23272.2
600	13359.9	15158.6	16917.7	18643.9	20338.1	22001.9	23638.7
620	13563.7	15395.4	17186.2	18943.2			

TABLE XII

Free enthalpy G of krypton in $\text{J}\cdot\text{mol}^{-1}$

t ρ	0°	25°	50°	75°	100°	125°	150°
0	—∞	—∞	—∞	—∞	—∞	—∞	—∞
1	0	194.6	363.0	507.2	629.0	729.7	811.0
20	6573.9	7415.2	8229.1	9018.0	9784.1	10528.0	11252.1
40	7919.1	8929.7	9911.4	10867.7	11800.3	12710.1	13599.2
60	8624.7	9744.8	10834.5	11898.2	12937.4	13953.4	14948.0
80	9076.5	10281.4	11454.8	12601.4	13722.9	14820.4	15896.2
100	9395.7	10671.8	11915.4	13131.6	14322.1	15488.4	16632.6
120	9636.0	10974.5	12280.2	13558.0	14809.4	16036.4	17240.7
140	9826.0	11221.3	12583.3	13917.1	15224.3	16506.5	17765.9
160	9983.0	11431.0	12845.4	14231.5	15590.9	16924.8	18235.7
180	10118.4	11616.1	13080.4	14516.2	15925.1	17308.3	18668.7
200	10239.5	11785.3	13297.5	14781.4	16238.4	17669.5	19077.3
220	10352.3	11944.7	13504.3	15035.3	16539.4	18017.2	19471.8
240	10461.2	12100.3	13706.4	15284.3	16835.0	18359.1	19859.9
260	10570.1	12255.9	13908.9	15533.6	17130.9	18701.4	20248.3
280	10682.4	12415.7	14116.1	15788.2	17432.6	19049.9	20643.2
300	10802.0	12583.9	14332.7	16052.8	17745.0	19409.8	21050.2
320	10932.3	12764.4	14562.9	16332.4	18073.4	19786.5	21474.7
340	11077.4	12961.5	14811.5	16631.7	18422.9	20185.2	21922.3
360	11241.4	13179.6	15082.7	16955.4	18798.0	20610.9	22398.0
380	11429.2	13423.8	15382.1	17308.9	19204.1	21069.4	22907.8
400	11645.9	13699.3	15714.7	17697.7	19647.7	21566.7	23458.0
420	11897.2	14011.9	16086.8	18127.9	20134.3	22108.7	24054.3
440	12189.5	14367.9	16504.7	18605.7	20670.6	22702.1	24703.2
460	12529.4	14774.1	16974.9	19138.0	21263.1	23353.3	25412.1
480	12924.4	15238.0	17505.2	19731.9	21919.5	24070.0	26187.8
500	13382.2	15767.2	18103.0	20395.2	22646.9	24859.4	27037.7
520	13911.4	16370.1	18776.3	21136.1	23453.7	25729.7	27969.9
540	14520.8	17055.2	19533.7	21963.3	24347.9	26689.3	28992.4
560	15219.3	17830.6	20383.1	22883.6	25337.4	27745.3	30112.8
580	16014.6	18705.4	21333.6	23907.0	26430.8	28906.4	31339.7
600	16916.5	19689.5	22395.2	25043.6	27638.2	30182.4	32682.3
620	17935.2	20792.8	23578.0	26303.6			

TABLE XIII

Internal kinetic energy ΔK of krypton in J.mol ⁻¹							
t ρ	0°	25°	50°	75°	100°	125°	150°
0	0	0	0	0	0	0	0
20	- 95.6	- 64.5	-34.6	- 5.8	22.5	50.1	76.9
40	-169.1	-107.9	-48.9	+8.7	65.4	120.7	175.2
60	-219.8	-129.0	-40.9	45.6	130.6	214.3	297.0
80	-247.6	-127.5	-10.1	105.6	219.7	332.6	444.4
100	-253.1	-103.7	+43.6	189.5	334.0	477.3	619.1
120	-236.7	- 57.3	121.1	298.3	474.5	649.8	823.0
140	-198.1	+ 12.7	223.2	433.3	643.0	851.5	1058.1
160	-137.3	106.9	351.1	595.9	841.0	1084.8	1326.5
180	- 53.3	226.2	506.7	788.4	1071.0	1352.1	1631.4
200	+ 54.8	372.5	692.2	1013.4	1336.3	1657.3	1976.2
220	188.6	547.9	910.0	1274.0	1639.9	2003.8	2364.8
240	350.2	755.2	1163.6	1573.6	1985.5	2395.3	2802.0
260	542.5	997.9	1456.8	1916.7	2378.5	2837.5	3292.9
280	769.8	1280.8	1794.5	2308.7	2824.2	3336.1	3843.5
300	1037.0	1609.2	2182.6	2755.8	3329.0	3897.4	4460.6
320	1350.6	1989.8	2628.3	3265.1	3900.2	4529.2	5151.6
340	1718.1	2430.3	3139.4	3844.6	4546.1	5239.6	5925.1
360	2148.3	2939.8	3724.9	4503.8	5275.9	6038.0	6790.8
380	2651.1	3528.3	4395.2	5252.4	6099.8	6935.1	7759.0
400	3238.1	4207.1	5161.3	6102.1	7029.3	7942.2	8841.5
420	3922.2	4989.2	6035.9	7065.3	8076.9	9071.7	10050.6
440	4717.6	5888.4	7032.8	8155.7	9256.6	10337.3	11399.5
460	5639.8	6919.8	8167.2	9387.8	10582.7	11753.2	12902.6
480	6705.5	8100.0	9455.5	10777.6	12070.7	13335.1	14575.1
500	7933.0	9446.7	10914.6	12342.2	13737.5	15099.1	16433.0
520	9341.2	10978.5	12562.6	14099.9	15600.3	17062.9	18493.5
540	10949.9	12714.3	14418.1	16068.6	17677.5	19243.8	20773.1
560	12778.3	14672.3	16498.2	18264.0	19984.7	21657.3	23288.2
580	14843.6	16871.0	18822.0	20707.2	22541.3	24321.8	26056.2
600	17166.6	19332.4	21412.5	23421.3	25368.4	27258.3	29097.2
620	19771.1	22080.5	24292.8	26430.0			

TABLE XIV

Specific heat C_v of krypton in $\text{J}\cdot\text{mol}^{-1}\cdot\text{deg}^{-1}$							
t p	0°	25°	50°	75°	100°	125°	150°
0	12.471	12.471	12.471	12.471	12.471	12.471	12.471
20	12.76	12.73	12.72	12.70	12.68	12.67	12.65
40	13.09	13.02	12.96	12.92	12.87	12.85	12.82
60	13.45	13.31	13.20	13.12	13.06	13.01	12.97
80	13.82	13.60	13.44	13.32	13.23	13.16	13.12
100	14.16	13.87	13.66	13.49	13.38	13.30	13.25
120	14.42	14.11	13.86	13.66	13.52	13.44	13.39
140	14.64	14.32	14.03	13.81	13.65	13.56	13.50
160	14.80	14.49	14.18	13.94	13.77	13.67	13.61
180	14.91	14.62	14.31	14.05	13.87	13.77	13.72
200	14.99	14.73	14.41	14.15	13.97	13.87	13.81
220	15.03	14.81	14.49	14.23	14.05	13.96	13.91
240	15.05	14.85	14.57	14.31	14.14	14.05	14.00
260	15.03	14.88	14.63	14.38	14.22	14.13	14.08
280	15.01	14.90	14.69	14.45	14.30	14.22	14.18
300	14.98	14.92	14.74	14.52	14.38	14.31	14.28
320	14.96	14.94	14.80	14.60	14.47	14.41	14.38
340	14.95	14.98	14.86	14.69	14.57	14.52	14.49
360	14.95	15.03	14.95	14.79	14.69	14.64	14.62
380	14.97	15.09	15.04	14.91	14.82	14.77	14.75
400	15.03	15.18	15.16	15.05	14.97	14.93	14.90
420	15.13	15.30	15.31	15.21	15.13	15.09	15.07
440	15.26	15.45	15.48	15.39	15.32	15.28	15.26
460	15.43	15.64	15.67	15.60	15.52	15.49	15.47
480	15.64	15.85	15.90	15.83	15.75	15.71	15.70
500	15.90	16.11	16.17	16.08	16.01	15.96	15.95
520	16.19	16.40	16.46	16.37	16.28	16.23	16.22
540	16.50	16.73	16.78	16.68	16.57	16.53	16.51
560	16.85	17.08	17.13	17.01	16.90	16.84	16.81
580	17.25	17.47	17.50	17.38	17.26	17.19	17.15
600	17.68	17.88	17.90	17.76	17.63	17.56	17.51
620	18.16	18.34	18.33	18.19			

TABLE XV

Specific heat C_p of krypton in $\text{J}\cdot\text{mol}^{-1}\cdot\text{deg}^{-1}$							
t p	0°	25°	50°	75°	100°	125°	150°
0	20.786	20.786	20.786	20.786	20.786	20.786	20.786
20	23.20	22.92	22.69	22.51	22.34	22.20	22.07
40	26.16	25.37	24.79	24.33	23.96	23.65	23.39
60	29.65	28.11	27.03	26.23	25.62	25.12	24.71
80	33.56	31.09	29.40	28.18	27.26	26.56	25.99
100	37.82	34.20	31.79	30.11	28.88	27.94	27.20
120	42.23	37.33	34.15	31.99	30.43	29.25	28.35
140	46.63	40.31	36.36	33.72	31.85	30.45	29.38
160	50.77	43.03	38.33	35.24	33.08	31.50	30.29
180	54.33	45.33	39.98	36.50	34.12	32.38	31.07
200	57.09	47.09	41.25	37.51	34.92	33.07	31.66
220	58.85	48.22	42.11	38.19	35.49	33.56	32.12
240	59.48	48.72	42.57	38.59	35.85	33.89	32.41
260	59.18	48.68	42.65	38.70	36.00	34.04	32.56
280	57.97	48.09	42.36	38.56	35.95	34.04	32.60
300	56.17	47.13	41.79	38.22	35.74	33.92	32.53
320	53.83	45.83	41.01	37.71	35.39	33.68	32.37
340	51.27	44.41	40.10	37.10	34.96	33.37	32.14
360	48.72	42.86	39.11	36.41	34.46	33.00	31.86
380	46.21	41.36	38.11	35.70	33.93	32.59	31.56
400	43.91	39.88	37.09	34.98	33.42	32.21	31.25
420	41.83	38.51	36.15	34.30	32.88	31.79	30.94
440	40.00	37.27	35.26	33.66	32.40	31.42	30.63
460	38.39	36.17	34.45	33.05	31.93	31.06	30.35
480	37.02	35.20	33.74	32.52	31.52	30.73	30.08
500	35.87	34.36	33.12	32.02	31.14	30.44	29.86
520	34.87	33.66	32.60	31.63	30.82	30.19	29.67
540	34.03	33.07	32.17	31.28	30.55	29.98	29.51
560	33.38	32.58	31.81	31.02	30.34	29.82	29.39
580	32.90	32.22	31.53	30.81	30.19	29.70	29.30
600	32.55	31.94	31.31	30.64	30.08	29.62	29.24
620	32.34	31.78	31.20	30.57			

TABLE XVI

Sound velocity of krypton in m.s ⁻¹							
t ρ	0°	25°	50°	75°	100°	125°	150°
0	212.5	222.0	231.2	239.9	248.4	256.6	264.5
20	210.2	220.8	230.8	240.4	249.5	258.4	266.9
40	208.8	220.2	231.1	241.5	251.4	260.9	270.0
60	208.0	220.5	232.3	243.5	254.2	264.4	274.2
80	208.0	221.6	234.3	246.4	257.8	268.7	279.0
100	208.7	223.5	237.3	250.2	262.4	273.9	284.9
120	210.6	226.4	241.2	255.1	268.1	280.3	291.7
140	213.5	230.4	246.2	261.0	274.8	287.6	299.7
160	217.7	235.6	252.3	268.0	282.6	296.1	308.8
180	223.1	242.0	259.7	276.3	291.7	305.9	319.2
200	229.8	249.7	268.5	285.9	302.1	316.9	330.8
220	238.0	258.8	278.7	297.0	313.9	329.4	343.8
240	247.7	269.6	290.0	309.6	327.2	343.3	358.3
260	259.3	282.3	303.8	323.8	342.1	358.8	374.4
280	272.9	296.8	319.0	339.8	358.7	376.0	392.1
300	288.8	313.3	336.1	357.6	377.1	394.8	411.3
320	306.8	331.8	355.3	377.3	397.2	415.4	432.4
340	327.2	352.7	376.6	399.0	419.3	437.9	455.3
360	350.0	375.6	399.9	422.7	443.3	462.2	479.9
380	375.4	401.0	425.4	448.3	469.2	488.5	506.5
400	403.0	428.6	453.0	476.1	497.2	516.8	535.0
420	433.0	458.5	482.7	505.9	527.2	547.0	565.4
440	465.5	490.6	514.7	537.8	559.3	579.1	597.6
460	500.0	524.7	548.7	571.7	593.2	613.0	631.7
480	536.8	561.1	584.7	607.6	629.1	648.9	667.4
500	575.4	599.4	622.5	645.3	666.7	686.6	705.2
520	616.0	639.5	662.3	684.9	706.3	726.1	744.5
540	658.5	681.3	703.8	726.1	747.4	766.9	785.4
560	702.4	724.6	746.6	768.8	789.9	809.2	827.5
580	747.6	769.3	791.3	813.3	834.0	853.1	871.0
600	795.0	816.2	837.7	859.6	879.8	898.5	915.8
620	843.7	864.8	886.0	907.8			

TABLE XVII

Joule-Thomson coefficient of krypton in deg.atm ⁻¹							
t ρ	0°	25°	50°	75°	100°	125°	150°
0	0.937	0.817	0.716	0.631	0.560	0.498	0.445
20	0.900	0.777	0.676	0.594	0.523	0.462	0.412
40	0.861	0.735	0.634	0.553	0.485	0.427	0.377
60	0.814	0.688	0.590	0.511	0.446	0.392	0.345
80	0.760	0.639	0.545	0.469	0.407	0.356	0.312
100	0.704	0.589	0.499	0.428	0.369	0.320	0.279
120	0.647	0.538	0.454	0.387	0.332	0.286	0.247
140	0.590	0.487	0.409	0.346	0.296	0.253	0.217
160	0.533	0.438	0.365	0.307	0.260	0.221	0.188
180	0.479	0.390	0.323	0.270	0.227	0.191	0.160
200	0.426	0.344	0.282	0.234	0.194	0.161	0.134
220	0.375	0.300	0.244	0.200	0.164	0.134	0.109
240	0.326	0.258	0.207	0.167	0.135	0.108	0.0859
260	0.280	0.219	0.173	0.137	0.109	0.0845	0.0644
280	0.236	0.182	0.141	0.109	0.0838	0.0625	0.0446
300	0.196	0.147	0.112	0.0837	0.0611	0.0423	0.0265
320	0.158	0.116	0.0845	0.0601	0.0403	0.0238	0.0100
340	0.123	0.0870	0.0600	0.0387	0.0215	0.00716	-0.00489
360	0.0918	0.0610	0.0378	0.0195	0.00462	-0.00775	-0.0182
380	0.0637	0.0377	0.0181	0.00237	-0.0104	-0.0211	-0.0300
400	0.0388	0.0172	0.00064	-0.0127	-0.0235	-0.0326	-0.0403
420	0.0171	-0.00077	-0.0146	-0.0258	-0.0351	-0.0428	-0.0493
440	-0.00157	-0.0163	-0.0277	-0.0371	-0.0449	-0.0515	-0.0570
460	-0.0176	-0.0295	-0.0390	-0.0468	-0.0534	-0.0589	-0.0636
480	-0.0310	-0.0407	-0.0485	-0.0550	-0.0605	-0.0652	-0.0692
500	-0.0422	-0.0500	-0.0564	-0.0618	-0.0665	-0.0703	-0.0737
520	-0.0515	-0.0576	-0.0628	-0.0674	-0.0713	-0.0745	-0.0773
540	-0.0590	-0.0637	-0.0679	-0.0718	-0.0751	-0.0778	-0.0801
560	-0.0648	-0.0686	-0.0719	-0.0751	-0.0780	-0.0803	-0.0822
580	-0.0692	-0.0722	-0.0750	-0.0777	-0.0801	-0.0821	-0.0837
600	-0.0724	-0.0749	-0.0773	-0.0797	-0.0816	-0.0833	-0.0848
620	-0.0746	-0.0767	-0.0787	-0.0808			

Received 3-3-66

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