

## Thermodynamic properties of saturated liquid/vapor

This section contains data on the thermodynamic properties on the saturated vapor/liquid boundary for a wide range of liquids/vapors used in a variety of technological contexts. The primary value of this data is to allow quantification of the various thermo-fluid-mechanical processes that involve liquid/vapor interfaces. The tables are dense to allow inclusion of a wide range of thermophysical properties and this requires a very small script. The data is listed using the temperature as the primary tabulating variable and efforts were made to cover the entire range between the triple point temperature (TET) and the critical point temperature (TEC); however, in some instances the author was unable to find values for these important end-point temperatures. Moreover, the reader will observe that there are many vacant boxes in the tables for which the author was not able to find data. The last line in each table contains the reference from which the data was extracted. Within the table an asterisk denotes a value obtained by interpolation using accepted variations with temperature; this is particularly true for the surface tension whose linear dependence with temperature and zero value at the critical point are widely accepted. Also within the table the # denotes a value not necessarily at saturation.

### Notation used in the tables:

TET	Triple point temperature, $^{\circ}K$	TEC	Critical point temperature, $^{\circ}K$
TEM	Melting temperature at atmospheric pressure, $^{\circ}K$	MOL	Molecular weight
PRC	Critical point pressure, $kg/m\ s^2$	DEC	Critical point density, $kg/m^3$
TER	Reduced temperature, $TEK/TEC$	TEK	Temperature, $^{\circ}K$
PRV	Vapor pressure, $kg/m\ s^2$	DEV	Vapor density, $kg/m^3$
DEL	Liquid density, $kg/m^3$	HEV	Saturated vapor enthalpy, $m^2/s^2$
HEL	Saturated liquid enthalpy, $m^2/s^2$		
HLT	Latent heat of vaporization, $m^2/s^2$		
CPL	Specific heat of liquid at constant pressure, $m^2/s^2\ ^{\circ}K$		
CPV	Specific heat of vapor at constant pressure, $m^2/s^2\ ^{\circ}K$		
KNL	Thermal conductivity of liquid, $kg\ m/s^3\ ^{\circ}K$	KNV	Thermal conductivity of vapor, $kg\ m/s^3\ ^{\circ}K$
DFL	Thermal diffusivity of liquid, $m^2/s$	DFV	Thermal diffusivity of vapor, $m^2/s$
VKL	Kinematic viscosity of liquid, $m^2/s$	VKV	Kinematic viscosity of vapor, $m^2/s$
VDL	Dynamic viscosity of liquid, $kg/m\ s$	VDV	Dynamic viscosity of vapor, $kg/m\ s$
STL	Surface tension, $kg/s^2$		
HLL	Henry's law constant, the mass fraction of saturated solution of air in liquid, $m\ s^2/kg$		

## Some conversion factors:

Density:	1 <i>lb/ft</i> <sup>3</sup>	=	16.01846 <i>kg/m</i> <sup>3</sup>
	1 <i>gm/cm</i> <sup>3</sup>	=	1000 <i>kg/m</i> <sup>3</sup>
Pressure:	1 <i>psi</i>	=	6894.757 <i>kg/m s</i> <sup>2</sup>
	1 <i>atm</i>	=	101325 <i>kg/m s</i> <sup>2</sup>
	1 <i>dyne/cm</i> <sup>2</sup>	=	0.1 <i>kg/m s</i> <sup>2</sup>
	1 <i>newton/m</i> <sup>2</sup>	=	1 <i>kg/m s</i> <sup>2</sup>
	1 <i>mm.Hg</i>	=	133.322 <i>kg/m s</i> <sup>2</sup>
Heat:	1 <i>cal/gm</i>	=	4184 <i>m</i> <sup>2</sup> / <i>s</i> <sup>2</sup>
	1 <i>BTU/lb</i>	=	2326 <i>m</i> <sup>2</sup> / <i>s</i> <sup>2</sup>
	1 <i>joule/gm</i>	=	1000 <i>m</i> <sup>2</sup> / <i>s</i> <sup>2</sup>
Specific Heat:	1 <i>cal/gm °K</i>	=	4184 <i>m</i> <sup>2</sup> / <i>s</i> <sup>2</sup> ° <i>K</i>
	1 <i>BTU/lb °F</i>	=	4184 <i>m</i> <sup>2</sup> / <i>s</i> <sup>2</sup> ° <i>K</i>
Thermal Conductivity:	1 <i>cal/cm s °K</i>	=	418.4 <i>kg m/s</i> <sup>3</sup> ° <i>K</i>
	1 <i>BTU/ft hr °F</i>	=	1.729577 <i>kg m/s</i> <sup>3</sup> ° <i>K</i>
	1 <i>W/m°K</i>	=	1 <i>kg m/s</i> <sup>3</sup> ° <i>K</i>
	1 <i>mW/cm°K</i>	=	0.1 <i>kg m/s</i> <sup>3</sup> ° <i>K</i>
Diffusivity: (incl. Kinematic Viscosity)	1 <i>cm</i> <sup>2</sup> / <i>s</i>	=	0.0001 <i>m</i> <sup>2</sup> / <i>s</i>
	1 <i>ft</i> <sup>2</sup> / <i>s</i>	=	0.0929 <i>m</i> <sup>2</sup> / <i>s</i>
Dynamic Viscosity:	1 <i>centistokes</i>	=	0.000001 <i>m</i> <sup>2</sup> / <i>s</i>
	1 <i>centipoise</i>	=	0.001 <i>kg/m s</i>
	1 <i>lb/ft s</i>	=	1.488164 <i>kg/m s</i>
Surface tension:	1 <i>lb/ft hr</i>	=	0.0004134 <i>kg/m s</i>
	1 <i>dyne/cm</i>	=	0.001 <i>kg/s</i> <sup>2</sup>
Force:	1 <i>Newton</i>	=	1 <i>kg m/s</i> <sup>2</sup>
	1 <i>dyne</i>	=	0.00001 <i>kg m/s</i> <sup>2</sup>
Power:	1 <i>HP</i>	=	745.7 <i>kg/m</i> <sup>2</sup> / <i>s</i> <sup>3</sup>
	1 <i>W</i>	=	1 <i>kg/m</i> <sup>2</sup> / <i>s</i> <sup>3</sup>
	1 <i>kW</i>	=	1000 <i>kg/m</i> <sup>2</sup> / <i>s</i> <sup>3</sup>
Energy:	1 <i>erg = 1dyne cm</i>	=	0.0000001 <i>kg/m</i> <sup>2</sup> / <i>s</i> <sup>2</sup>
	1 <i>joule</i>	=	1 <i>kg/m</i> <sup>2</sup> / <i>s</i> <sup>2</sup>
	1 <i>BTU</i>	=	1054.35 <i>kg/m</i> <sup>2</sup> / <i>s</i> <sup>2</sup>
	1 <i>cal</i>	=	4.184 <i>kg/m</i> <sup>2</sup> / <i>s</i> <sup>2</sup>

# Tables:

WATER			TET=273.0	TEC=647.0		TEM=273			PRC=2.289E+07			DEC=317.0						
TER	TEK	PRV	DEL	DEV	HLT × 10 <sup>-6</sup>	HEV × 10 <sup>-6</sup>	CPL	KNL	DFL × 10 <sup>6</sup>	CPV	KNV	DFV	VKL × 10 <sup>6</sup>	VDL × 10 <sup>3</sup>	VKV	VDV × 10 <sup>6</sup>	STL × 10 <sup>2</sup>	HLL × 10 <sup>10</sup>
0.422	273.0	6.109E+02	1000.0	4.847E-03	2.500	2.500	4212	0.550	0.131	1857	0.0158	1.755E-03	1.79	1.79	1.830E-03	8.85	7.56	3.67
0.429	277.8	8.391E+02	1000.0	6.555E-03	2.488	2.507	4200	0.560	0.133	1857	0.0162	1.331E-03	1.55	1.55	1.380E-03	9.02	7.49	3.23
0.447	288.9	1.769E+03	998.7	1.327E-02	2.463	2.528	4179	0.588	0.141	1866	0.0170	0.686E-03	1.13	1.13	0.707E-03	9.38	7.34	2.57
0.464	300.0	3.495E+03	996.3	2.527E-02	2.436	2.548	4170	0.610	0.147	1882	0.0179	0.376E-03	0.866	0.866	0.388E-03	9.80	7.17	2.14
0.481	311.1	6.550E+03	993.2	4.569E-02	2.410	2.568	4170	0.629	0.152	1899	0.0187	0.216E-03	0.687	0.687	0.223E-03	10.2	6.98	1.87
0.498	322.2	1.167E+04	988.9	7.876E-02	2.384	2.588	4175	0.645	0.156	1916	0.0196	0.130E-03	0.564	0.558	0.135E-03	10.6	6.81	1.67
0.515	333.3	1.992E+04	983.4	1.300E-01	2.357	2.608	4179	0.659	0.160	1941	0.0205	0.812E-04	0.480	0.472	0.846E-04	11.0	6.62	1.57
0.532	344.4	3.269E+04	977.4	2.069E-01	2.330	2.627	4187	0.667	0.163	1974	0.0214	0.524E-04	0.411	0.402	0.551E-04	11.4	6.42	1.50
0.549	355.5	5.177E+04	970.3	3.185E-01	2.302	2.646	4195	0.674	0.166	2012	0.0224	0.350E-04	0.358	0.347	0.371E-04	11.8	6.22	1.48
0.567	366.6	7.950E+04	963.3	4.762E-01	2.274	2.664	4208	0.679	0.168	2054	0.0234	0.239E-04	0.317	0.305	0.256E-04	12.2	6.02	1.50
0.610	394.4	2.056E+05	942.3	1.159E+00	2.198	2.707	4246	0.685	0.171	2196	0.0260	0.102E-04	0.242	0.228	0.114E-04	13.2	*5.50	
0.653	422.2	4.620E+05	915.4	2.477E+00	2.116	2.743	4308	0.683	0.173	2384	0.0290	0.491E-05	0.204	0.187	0.573E-05	14.2	*4.96	
0.696	450.0	9.281E+05	890.0	4.791E+00	2.026	2.773	4392	0.676	0.173	2635	0.0324	0.257E-05	0.176	0.157	0.317E-05	15.2	*4.41	
0.738	477.8	1.705E+06	861.3	8.599E+00	1.922	2.794	4518	0.659	0.169	2970	0.0365	0.143E-05	0.157	0.135	0.191E-05	16.4	*3.84	
0.824	533.3	4.694E+06	785.3	2.373E+01	1.660	2.795	4977	0.603	0.154	4183	0.0475	0.479E-06	0.135	0.106	0.784E-06	18.6	*2.62	
0.910	588.9	1.064E+07	678.8	5.978E+01	1.276	2.710	6316	0.505	0.118	7655	0.0666	0.146E-06	0.128	0.0868	0.365E-06	21.8	*1.37	
0.996	644.4	2.133E+07	434.1	2.105E+02	0.388	2.301											*0.06	
REF:	A	A	A	A	A	A												

CARBON DIOXIDE			TET=216.54	TEC=384.21		TEM=			MOL=44.01			PRC=7.383E+06			DEC=464.0				
TER	TEK	PRV	DEL	DEV	HLT × 10 <sup>-6</sup>	HEV × 10 <sup>-6</sup>	CPL	KNL	DFL × 10 <sup>6</sup>	CPV	KNV	DFV	VKL × 10 <sup>6</sup>	VDL × 10 <sup>3</sup>	VKV	VDV × 10 <sup>6</sup>	STL × 10 <sup>2</sup>	HLL × 10 <sup>10</sup>	
0.712	216.5	5.173E+05	1181	1.374E+01	.3519	.3519									0.78E-06	10.7	*1.61		
0.723	220	6.000E+05	1167	1.584E+01	.3461	.3531	1800	.0775	.0369	1008	*.011	*6.7E-07	0.119	0.139	0.68E-06	10.8	*1.53		
0.756	230	8.949E+05	1129	2.333E+01	.3280	.3561	1860	.0972	.0463	1093	.0114	4.47E-07	0.118	0.133	0.48E-06	11.3	*1.30		
0.789	240	1.285E+06	1089	3.337E+01	.3091	.3580	1950	.1090	.0513	1213	.0121	2.99E-07	0.117	0.127	3.60E-07	12.0	*1.08		
0.822	250	1.788E+06	1046	4.673E+01	.2887	.3586	2010	.1148	.0546	1349	.0129	2.05E-07	0.116	0.121	2.70E-07	12.6	0.874		
0.855	260	2.421E+06	999	6.443E+01	.2660	.3575	2130	.1119	.0526	1420	.0136	1.49E-07	0.114	0.114	2.05E-07	13.2	0.674		
0.886	270	3.204E+06	947	8.826E+01	.2401	.3543	2340	.1067	.0481		.0144		0.111	0.105	1.55E-07	13.7	0.486		
0.920	280	4.160E+06	886	1.213E+02	.2092	.3479	2850	.0998	.0395		.0151		0.104	0.092	1.17E-07	14.2	0.313		
0.953	290	5.314E+06	807	1.708E+02	.1691	.3361	4310	.0910	.0262		.0158		0.094	0.076	0.86E-07	14.7	0.158		
0.986	300	6.706E+06	680	2.667E+02	.1049	.3099		.0759			.0166		0.083	0.056	0.57E-07	15.2	*.034		
1.000	304.2	7.383E+06	464	4.640E+02	0.0	.2573											0.0		
REF:	A	A	A	A	A	A	F	F		A E	# O	#	F	F O	#	#	O	O	

AMMONIA			TET=195.4	TEC=406.8		TEM=			MOL=17.03			PRC=1.163E+07			DEC=237.64				
TER	TEK	PRV	DEL	DEV	HLT × 10 <sup>-6</sup>	HEV × 10 <sup>-6</sup>	CPL	KNL	DFL × 10 <sup>6</sup>	CPV	KNV	DFV	VKL × 10 <sup>6</sup>	VDL × 10 <sup>3</sup>	VKV	VDV × 10 <sup>6</sup>	STL × 10 <sup>2</sup>	HLL × 10 <sup>10</sup>	
0.492	200	8.644E+03	728.9	8.897E-02	1.477	1.477	4320								0.770E-04	6.85	3.82		
0.541	220	3.380E+04	705.7	3.189E-01	1.425	1.513	4400	0.546	0.176		.0179		0.455	0.321	0.235E-04	7.50	3.41		
0.590	240	1.023E+05	681.7	8.969E-01	1.369	1.545	4460	0.547	0.180		.0188		0.392	0.267	0.909E-05	8.15	3.00		
0.639	260	2.554E+05	656.2	2.116E+00	1.307	1.572	4530	0.544	0.183		.0207		0.379	0.249	0.414E-05	8.75	2.61		
0.688	280	5.510E+05	628.9	4.382E+00	1.237	1.595	4630	0.532	0.183		.0225		0.369	0.232	0.215E-05	9.40	2.22		
0.737	300	1.061E+06	600.2	8.244E+00	1.157	1.610	4760	0.511	0.179	3190	.0246	0.935E-06	0.353	0.212	0.123E-05	10.1	1.83		
0.787	320	1.872E+06	568.2	1.450E+01	1.066	1.617	4920	0.481	0.172	3670	.0266	0.500E-06	0.333	0.189	0.745E-06	10.8	1.46		
0.836	340	3.079E+06	532.5	2.439E+01	0.958	1.612	*5170	0.445	0.162	4650			0.310	0.165	0.472E-06	11.5	1.09		
0.885	360	4.791E+06	490.4	4.019E+01	0.825	1.590	*5560			5380					0.306E-06	12.3	0.73		
0.934	380	7.136E+06	436.5	6.720E+01	0.649	1.541	*6370			11600					*0.19E-06	*13.0	0.39		
0.983	400	1.030E+07	347.3	1.304E+02	0.352	1.417	*9840								*0.11E-06	*13.8	0.09		
1.000	406.8	1.163E+07	237.6	2.376E+02	0.0	1.234											0.0		
REF:	A	A	A	A	A	A	E	F		E	# O	#	F	F O	#	O	H		

METHANE			TET=90.68	TEC=190.6		TEM=			MOL=16.043			PRC=4.599E+06			DEC=160.43				
TER	TEK	PRV	DEL	DEV	HLT × 10 <sup>-6</sup>	HEV × 10 <sup>-6</sup>	CPL	KNL	DFL × 10 <sup>6</sup>	CPV	KNV	DFV	VKL × 10 <sup>6</sup>	VDL × 10 <sup>3</sup>	VKV	VDV × 10 <sup>6</sup>	STL × 10 <sup>2</sup>	HLL × 10 <sup>10</sup>	
0.498	95	1.991E+04	445.8	0.409E+00	0.537	0.551	3330	0.216	0.149	2110	0.0109	1.263E-05	0.384	0.171	0.954E-05	3.9	1.76		
0.525	100	3.451E+04	439.0	0.677E+00	0.530	0.561	3380	0.206	0.139	2130	0.0116	0.804E-05	0.355	0.156	0.606E-05	4.1	1.65		
0.551	105	5.657E+04	432.1	1.064E+00	0.522	0.570	3430	0.197	0.133	2150	0.0124	0.542E-05	0.317	0.137	0.395E-05	4.2	1.54		
0.577	110	8.841E+04	425.0	1.602E+00	0.514	0.579	3480	0.187	0.126	2170	0.0131	0.377E-05	0.280	0.119	0.281E-05	4.5	1.43		
0.603	115	1.326E+05	417.7	2.324E+00	0.504	0.587	3530	0.180	0.122	2200	0.0140	0.274E-05	0.256	0.107	0.202E-05	4.7	1.33		
0.630	120	1.919E+05	410.2	3.267E+00	0.494	0.595	3580	0.169	0.115	2240	0.0147	0.201E-05	0.232	0.095	0.150E-05	4.9	*1.22		
0.682	130	3.681E+05	394.3	5.988E+00	0.472	0.609	3700	0.156	0.107	2360	0.0164	0.116E-05	0.200	0.079	0.900E-06	5.4	*1.01		
0.735	140	6.423E+05	377.1	1.016E+01	0.445	0.619	3890	0.142	0.097	2550	0.0182	0.702E-06	0.172	0.065	0.570E-06	5.8	*0.81		
0.787	150	1.041E+06	358.2	1.634E+01	0.412	0.626	4100	0.126	0.086	2860	0.0204	0.437E-06	0.154	0.055	0.390E-06	6.4	*0.62		
0.839	160	1.594E+06	336.6	2.543E+01	0.371	0.628	4520	0.114	0.075	3346	0.0230	0.270E-06	0.137	0.046	0.275E-06	7.0	*0.44		
0.892	170	2.331E+06	310.7	3.911E+01	0.319	0.622	5230	0.100	0.062	4600	0.0270	0.150E-06	0.119	0.037	0.202E-06	7.9	*0.27		
0.944	180	3.289E+06	276.4	6.169E+01	0.245	0.603	7530	0.086	0.041	7950	0.0346	0.705E-07	0.109	0.030	0.144E-06	8.9	*0.12		
0.971	185	3.865E+06	251.3	8.097E+01	0.190	0.582	1.2E4	0.084	0.029	1.4E4	0.0475	0.413E-07	0.099	0.025	0.124E-06	10.0	*0.06		
REF:	A	A	A	A	A	A	C	C		C	C		C	C		C	I		





NITROGEN			TET=63.15		TEC=126.2		TEM=		MOL=28.016		PRC=		DEC=					
TER	TEK	PRV	DEL	DEV	HLT×10 <sup>-6</sup>	HEV×10 <sup>-6</sup>	CPL	KNL	DFL×10 <sup>6</sup>	CPV	KNV	DFV	VKL×10 <sup>6</sup>	VDL×10 <sup>3</sup>	VKV	VDV×10 <sup>6</sup>	STL×10 <sup>2</sup>	HLL×10 <sup>10</sup>
0.500	63.15	1.254E+04	867.3	0.675E+00	.2148	.2148	1950	0.152	.0878	1060	0.0057	0.797E-05	0.326	0.283	0.620E-05	4.2	*1.21	
0.515	65	1.742E+04	860.6	0.914E+00	.2133	.2166	2010	0.149	.0861	1070	0.0060	0.614E-05	0.294	0.253	0.470E-05	4.3	*1.16	
0.555	70	3.858E+04	840.3	1.878E+00	.2081	.2211	2050	0.143	.0830	1080	0.0066	0.325E-05	0.243	0.204	0.250E-05	4.7	1.05	
0.594	75	7.612E+04	819.0	3.544E+00	.2021	.2254	2070	0.135	.0796	1110	0.0073	0.186E-05	0.200	0.164	0.144E-05	5.1	0.937	
0.634	80	1.370E+05	796.2	6.094E+00	.1956	.2291	2080	0.129	.0779	1140	0.0080	0.115E-05	0.168	0.134	0.890E-06	5.4	0.826	
0.673	85	2.291E+05	772.2	9.833E+00	.1886	.2324	2100	0.121	.0746	1200	0.0086	0.729E-06	0.149	0.115	0.610E-06	6.0	0.718	
0.713	90	3.608E+05	746.3	1.509E+01	.1806	.2351	2140	0.112	.0701	1250	0.0095	0.504E-06	0.130	0.097	0.420E-06	6.3	0.613	
0.753	95	5.411E+05	718.4	2.227E+01	.1716	.2370	2200	0.105	.0664	1340	0.0105	0.352E-06	0.115	0.083	0.310E-06	6.8	*.511	
0.792	100	7.790E+05	688.7	3.194E+01	.1612	.2380	2330	0.098	.0611	1480	0.0117	0.248E-06	0.103	0.071	0.220E-06	7.1	*.413	
0.832	105	1.084E+06	656.2	4.488E+01	.1492	.2379	2500	0.090	.0549	1670	0.0130	0.173E-06	0.093	0.061	0.172E-06	7.7	*.319	
0.872	110	1.467E+06	620.0	6.242E+01	.1349	.2363	2760	0.080	.0468	2010	0.0147	0.117E-06	0.084	0.052	0.135E-06	8.4	*.229	
0.911	115	1.940E+06	578.4	8.703E+01	.1170	.2325	3350	0.073	.0377	2680	0.0176	0.075E-06	0.076	0.044	0.106E-06	9.2	*.146	
0.951	120	2.513E+06	525.2	1.245E+02	.0926	.2251	4890	0.064	.0249	4810	0.0233	0.039E-06	0.068	0.036	0.085E-06	10.6	*.071	
1.000	126.2	3.400E+06	314.1	3.141E+02	0.0	.1808							0.054	0.017	0.054E-06	17.1	0.0	
REF:		A	A	A	A	A	C	C		C	C			C		C	I	

OXYGEN			TET=54.3		TEC=154.6		TEM=		MOL=32.00		PRC=5.043E+06		DEC=436.15					
TER	TEK	PRV	DEL	DEV	HLT×10 <sup>-6</sup>	HEV×10 <sup>-6</sup>	CPL	KNL	DFL×10 <sup>6</sup>	CPV	KNV	DFV	VKL×10 <sup>6</sup>	VDL×10 <sup>3</sup>	VKV	VDV×10 <sup>6</sup>	STL×10 <sup>2</sup>	HLL×10 <sup>10</sup>
0.388	60	0.725E+03	1282	0.466E-01	.2383	.2475	1664	0.183	.0858				0.452	0.580			*2.06	
0.453	70	0.625E+04	1238	0.345E+00	.2305	.2564	1670	0.172	.0832		.0064		0.287	0.355			1.83	
0.517	80	0.301E+05	1190	1.468E+00	.2223	.2649	1683	0.160	.0799		.0074		0.223	0.265	0.402E-05	5.9	1.57	
0.582	90	0.993E+05	1142	4.388E+00	.2132	.2726	1697	0.152	.0784		.0085		0.173	0.197	0.155E-05	6.8	1.32	
0.647	100	0.254E+06	1091	1.043E+01	.2026	.2792	1711	0.138	.0739		.0099		0.137	0.150	0.757E-06	7.9	*1.07	
0.711	110	0.543E+06	1035	2.127E+01	.1897	.2842	1740	0.124	.0688		.0115		0.115	0.119	0.433E-06	9.2	*0.81	
0.776	120	0.102E+07	974	3.928E+01	.1737	.2871	1810	0.110	.0624		.0136		0.100	0.097	0.275E-06	10.8	*0.57	
0.841	130	0.175E+07	903	6.835E+01	.1533	.2870	1930	0.096	.0551		.0163		0.092	0.083	0.189E-06	12.9	*0.35	
0.906	140	0.279E+07	813	1.168E+02	.1251	.2820	2150	0.081	.0463		.0201		0.086	0.070	0.135E-06	15.8	*0.17	
0.970	150	0.422E+07	676	2.141E+02	.0795	.2664		0.063			.0272		0.080	0.054	0.986E-07	21.1	*0.05	
0.996	154	0.493E+07						0.052			.0352			0.042		26.9		
REF:		A	A	A	A	A	A	N			N		N	N		N		

MERCURY			TET=		TEC=1763		TEM=234		MOL=200.6		PRC=1.530E+08		DEC=5500.6						
TER	TEK	PRV	DEL	DEV	HLT×10 <sup>-6</sup>	HEV×10 <sup>-6</sup>	CPL	KNL	DFL×10 <sup>6</sup>	CPV	KNV	DFV	VKL×10 <sup>6</sup>	VDL×10 <sup>3</sup>	VKV	VDV×10 <sup>6</sup>	STL×10 <sup>2</sup>	HLL×10 <sup>10</sup>	
0.133	234	0.160E-03					141.4											58.8	
0.155	273	0.247E-01	13630				140.1	8.20	4.29	103.6			0.124	1.69				*57.0	
0.183	323	1.689E+00	13510				138.5	9.39	5.02	103.6			0.104	1.40				*54.7	
0.227	400	1.397E+02	13300	8.425E-03	.3019	.3019	136.8	11.07	6.08	103.6			0.083	1.10				*51.2	
0.284	500	5.241E+03	13050	2.530E-01	.2989	.3123	135.5	12.74	7.20	103.7			0.071	0.93				*46.7	
0.340	600	5.757E+04	12820	2.319E+00	.2963	.3225	135.1	14.11	8.15	103.9			0.065	0.83				*42.3	
0.397	700	3.154E+05	12560	1.094E+01	.2931	.3325	136.0			104.3			*0.061	*0.76				*38.0	
0.454	800	1.122E+06	12320	3.440E+01	.2884	.3419	137.2			107			*0.058	*0.72				*33.8	
0.510	900	2.999E+06	12050	8.299E+01	.2816	.3505				110			*0.056	*0.68				*29.6	
0.567	1000	6.565E+06	11790	1.672E+02	.2725	.3581				115								*25.5	
0.624	1100	1.244E+07	11520	2.959E+02	.2611	.3645				*126								*21.6	
0.737	1300																		
0.851	1500																		
REF:		A O	A	A	A	A	F O	F	F	A O			F	F				H	

SODIUM			TET=371.0		TEC=2509		TEM=		MOL=22.99		PRC=3.41E+07		DEC=206.2						
TER	TEK	PRV	DEL	DEV	HLT×10 <sup>-6</sup>	HEV×10 <sup>-6</sup>	CPL	KNL	DFL×10 <sup>6</sup>	CPV	KNV	DFV	VKL×10 <sup>6</sup>	VDL×10 <sup>3</sup>	VKV	VDV×10 <sup>6</sup>	STL×10 <sup>2</sup>	HLL×10 <sup>10</sup>	
0.159	400	1.358E-04	920.7	0.960E-11	4.493	4.740	1373	86.8	68.7	1023			0.667	0.614				19.0	
0.199	500	7.635E-02	897.3	4.340E-07	4.438	4.820	1330	81.8	68.6	1316			0.464	0.416				18.0	
0.239	600	5.047E+00	873.6	2.409E-05	4.374	4.887	1299	76.4	67.3	1745			0.366	0.320				17.0	
0.279	700	9.869E+01	849.8	4.083E-04	4.296	4.938	1277	71.5	65.9	2160			0.312	0.265				16.0	
0.319	800	9.043E+02	825.8	3.321E-03	4.209	4.978	1264	66.8	64.0	2452			0.277	0.229				15.0	
0.359	900	5.010E+03	801.7	1.662E-02	4.116	5.011	1258	62.5	62.0	2597			0.254	0.204				14.0	
0.399	1000	1.955E+04	777.5	5.938E-02	4.021	5.042	1259	58.3	59.6	2624			0.238	0.185				13.0	
0.478	1200	1.482E+05	729.1	3.889E-01	3.835	5.109	1281	50.3	53.9	2515			0.219	0.160				11.0	
0.558	1400	6.203E+05	680.7	1.454E+00	3.640	5.175	1330	42.2	47.3	2391			0.209	0.142				9.0	
0.638	1600	1.798E+06	632.7	3.881E+00	3.416	5.225	1406	35.8	40.2	2301			0.206	0.130				7.0	
0.717	1800	4.087E+06	585.1	8.365E+00	3.153	5.255	1516	28.9	32.6	2261			0.205	0.112				5.0	
0.797	2000	7.851E+06	536.4	1.575E+01	2.834	5.256	1702	22.2	24.4	2481			0.209	0.105				*3.1	
0.877	2200	1.335E+07	481.7	2.765E+01	2.413	5.207	2101	15.6	15.8	3306			0.218	0.105				*1.5	
0.957	2400	2.076E+07	403.2	5.089E+01	1.727	5.025	3686	9.5	6.09	8476			0.246	0.099				*0.4	
0.996	2500	2.519E+07	300.9	9.975E+01	0.784	4.634	2.1E4	5.8	0.81	1.8E5			0.321	0.096				*0.0	
REF:		B	B	B	B	B	B	B	B	B			B	B				B	

URANIUM DIOXIDE			TET=	TEC=7560		TEM=		MOL=22.99		PRC=		DEC=						
TER	TEK	PRV	DEL	DEV	HLT× 10 <sup>-6</sup>	HEV× 10 <sup>-6</sup>	CPL	KNL	DFL ×10 <sup>6</sup>	CPV	KNV	DFV	VKL ×10 <sup>6</sup>	VDL ×10 <sup>3</sup>	VKV	VDV ×10 <sup>6</sup>	STL ×10 <sup>2</sup>	HLL× 10 <sup>10</sup>
0.413	3120	0.559E+03	8739		1.935	3.334	485						0.492	4.30			49.4	
0.423	3200	0.923E+03	8667		1.921	3.358	485						0.483	4.19			*48.2	
0.437	3300	0.166E+04	8577		1.903	3.389	485						0.468	4.01			*46.9	
0.450	3400	0.288E+04	8487		1.886	3.420	485						*452	*3.84			*45.6	
0.463	3500	0.480E+04	*8397		1.869	3.452	485						*441	*3.70			*44.3	
0.489	3700	0.122E+05	*8218		1.834	3.514	485						*419	*3.44			*41.7	
0.529	4000	0.400E+06	*7948		1.782	3.607							*395	*3.14			*37.8	
0.595	4500	0.192E+07	*7596		1.695	3.763							*363	*2.76			*31.5	
0.661	5000	0.634E+07	*7047		1.607	3.917							*353	*2.49			*25.5	
0.728	5500	*1.6E+07	*6600		*1.52	*4.07											*19.6	
0.794	6000	*3.3E+07	*6151		*1.43	*4.23											*14.1	
REF:		M	M		M	M	M						M	M			M	

NITROGEN TETROXIDE			TET=	TEC=431.35		TEM=261.95		MOL=92.016		PRC=9.937E+06		DEC=550.4						
TER	TEK	PRV	DEL	DEV	HLT× 10 <sup>-6</sup>	HEV× 10 <sup>-6</sup>	CPL	KNL	DFL ×10 <sup>6</sup>	CPV	KNV	DFV	VKL ×10 <sup>6</sup>	VDL ×10 <sup>3</sup>	VKV	VDV ×10 <sup>6</sup>	STL ×10 <sup>2</sup>	HLL× 10 <sup>10</sup>
0.607	261.9	1.894E+04	1514.6	0.640E+00														
0.626	270.0	2.963E+04	1496.5	0.102E+01														
0.649	280.0	4.998E+04	1474.0	0.177E+01														
0.673	290.0	8.182E+04	1451.5	0.294E+01														
0.682	294.3	1.003E+05	1441.8	0.346E+01	0.414													*2.58
0.691	298.1	1.195E+05	1433.2	0.406E+01			1581	0.131	0.058				0.2763	0.396			2.51	
0.719	310.0	2.023E+05	1406.1	0.649E+01														*2.29
0.742	320.0	3.069E+05	1383.3	0.894E+01														*2.10
0.788	340.0		1312.0	0.166E+02														*1.72
0.835	360.0		1236.0	0.312E+02														*1.34
0.881	380.0		1119.0	0.563E+02														*0.97
0.927	400.0		992.0	0.105E+03														*0.59
0.974	420.0		821.0	0.230E+03														*0.21
REF:	N	N	NP	P	N		N	N	N				N	N			N	

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