7g. Constants of Diatomic Molecules

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Explanation of Columns in Table 7g-1

(1) Identification of molecule.

(2) Mass numbers of the constituent atoms to which the data refer. If, in the original paper, the mass numbers are not clearly specified, or, if the data refer to the normal isotopic mixture, the mass numbers for the most abundant isotope are given in parentheses.

(3) Reduced mass μ in unified atomic mass units ($^{12}C = 12.0000000$). Precise atomic masses were taken from the 1961 nuclidic mass table [L. A. König, J. H. E. Mattauch, and A. H. Wapstra, *Nucl. Phys.* **31**, 18 (1962)].

(4) Designation of the ground state of the molecule. For multiplet Π, Δ, . . . states the spin-orbit coupling constant A has been added.

(5) (6) (8) (9) Rotational constant B_e.
Rotation-vibration interaction constant α_e
(from $B_v = B_e - \alpha_e(v + \frac{1}{2}) + \cdots$).
Vibrational frequency ω_e.
Anharmonic constant $\omega_e x_e$ (from $G(v) = \omega_e(v + \frac{1}{2}) - \omega_e x_e(v + \frac{1}{2})^2 + \cdots$).
All constants in cm^{-1}. They are derived from the analyses of molecular spectra in the microwave, infrared, visible, and vacuum uv region. For $^1\Sigma$ states, the constants in these columns correspond to the coefficients Y_{01}, $-Y_{11}$, Y_{10}, and $-Y_{20}$, respectively, in the Dunham series expansion for the term values

$$T_{vJ} = \sum_{lm} Y_{lm}(v + \tfrac{1}{2})^l J^m (J + 1)^m$$

(7) Equilibrium internuclear distance r_e in Å, calculated without correction from

$$r_e = \left(\frac{h}{8\pi^2 c\mu B_e}\right)^{\frac{1}{2}}$$

(10) Dissociation energy D_0° in electron-volts (eV). Data obtained by a large variety of both spectroscopic and thermochemical methods have been included.

Uncertain quantities are enclosed in parentheses ( ). Quantities in square brackets [ ] in columns (5) and (8) refer to B_0 and $\Delta G(\frac{1}{2})$ respectively. * after ω_e and $\omega_e x_e$ indicates that these numbers are for the natural isotopic mixture rather than for the isotope specified in column (2).

The physical constants and conversion factors given in Appendix VII of the following book have been used throughout: G. Herzberg, "Electronic Spectra and Electronic

Structure of Polyatomic Molecules," D. Van Nostrand Company, Inc., Princeton, N.J., 1966.

The data included in the table are taken from a new compilation of vibrational and rotational constants for the electronic states of all known diatomic molecules. This compilation is presently being prepared by G. Herzberg and K. P. Huber and will provide further details and the literature references. A critical table of dissociation energies has recently been published by A. G. Gaydon in his book "Dissociation Energies and Spectra of Diatomic Molecules," 3d edition, Chapman & Hall, Ltd., London, 1968.

TABLE 7g-1. CONSTANTS OF DIATOMIC MOLECULES

(1)	m_1 (2)	m_2 (2)	μ (3)	Ground state (4)	B_e (5)	α_e (6)	r_e (7)	ω_e (8)	$\omega_e x_e$ (9)	D_0° (10)
Ag_2	107	109	53.91779	.....	.....	.....	.....	192.4	0.643	1.63
AgAl	107	27	21.544070	$^1\Sigma^+$	0.12796	0.00076	2.4728	256.60	1.13	(1.7$_9$)
AgAu	(107)	197	(69.20476)	.....	.....	.....	.....	(200)	.....	2.0$_6$
AgBr	107	79	45.40207$_2$	$^1\Sigma^+$	0.0648337$_8$	0.0002359$_7$	2.3931	250.49	0.6871	3.0
AgCl	107	35	26.349782	$^1\Sigma^+$	0.12298386$_0$	0.00059540$_5$	2.2808	343.49	1.17	3.2$_4$
AgCu	(107)	(63)	(39.61199$_8$)	.....	.....	.....	.....	229.5	1	1.7$_6$
AgF	107	19	16.131608	$^1\Sigma^+$	0.2657	0.0019	1.983	513.45	2.59	3.6$_3$
AgGa	(107)	(69)	(41.90678$_9$)	.....	.....	.....	.....	184.7	0.65	
AgH	107	1	0.99841288	$^1\Sigma^+$	6.449	0.201	1.618$_1$	1759.9	34.06	2.4$_1$
	107	2	1.9768579$_5$	$^1\Sigma^+$	3.2572	0.0722	1.6180	1250.7	17.17	2.4$_4$
AgI	107	127	58.02466	$^1\Sigma^+$	0.044876	0.0001473	2.5444	206.52	0.445	2.6$_2$
AgIn	107	115	55.38014	.....	.....	.....	.....	155.8	0.42	
AgO	107	16	13.913242$_6$	$^2\Pi_{(i)}$ $A = (+135)$	0.3028	0.0025	2.000	490.4*	3.0*	(2.4)
AgSe	(107)	(80)	(45.73067$_4$)	$(^2\Pi)$	.....	.....	.....	(233)	.....	1.3$_7$
AgSn	(107)	(120)	(56.51557)	.....	.....	.....	.....	.....	.....	
AgTe	(107)	(130)	(58.64437)	$(^2\Pi)$	.....	.....	.....	195.3	0.30	
Al_2	27	27	13.490767$_5$	$^3\Sigma_g^-$	0.2054	0.0012	2.466$_5$	350.01	2.022	1.8$_6$
AlAu	27	197	23.730767$_1$	$^1\Sigma^+(0^+)$	0.12991$_3$	0.00066$_4$	2.3384	333.00	1.16$_3$	3.3$_4$
AlBr	27	79	20.107087$_0$	$^1\Sigma^+$	0.1591	0.000853	2.296	378.0	1.28	4.4$_3$
AlCl	27	35	15.230144$_3$	$^1\Sigma^+$	0.243926$_7$	0.001602$_1$	2.1302	481.30	1.95	5.0$_3$
AlF	27	19	11.1484731	$^1\Sigma^+$	0.552468	0.004950	1.6544	801.9$_5$	4.7$_6$	6.8$_9$
AlH	27	1	0.97153601	$^1\Sigma^+$	6.3906$_4$	0.1858$_1$	1.6478	1582.56$_3$	29.09$_0$	2.91
	27	2	1.8741981$_2$	$^1\Sigma^+$	3.3186	0.0597	1.6463	1211.95	15.138	2.94
AlH^+	27	1	.....	$^2\Sigma^+$	6.763	0.398	1.601$_8$	316.1	1.0	3.7$_7$
AlI	27	127	22.250735$_7$	$^1\Sigma^+$	.....	.....	.....	979.23	6.97	4.9$_8$
AlO	27	16	10.0419499	$^2\Sigma^+$	0.6413$_6$	0.0058$_0$	1.6178	.....	.....	2.2$_0$
AlP	27	31	14.4200738	.....	.....	.....	.....	517.12	3.33	3.7$_0$
AlS	27	32	14.6327874	$^2\Sigma^+$	0.2799	0.0018	2.028$_4$	467.6	2.08	3.4$_3$
AlSe	27	(80)	(20.171277$_4$)	$(^2\Sigma)$	.....	.....	.....	.....	.....	3.3$_7$
AlTe	27	(130)	(22.341268)	$(^2\Sigma)$	.....	.....	.....	30.7	2.64	0.0096$_8$
Ar_2	40	40	19.9811919	$(^1\Sigma_g^+)$	.....	.....	.....	.....	.....	≥1.04$_8$
Ar_2^+	40	40	.....	.....	.....	.....	.....	429.4	1.12	3.94
As_2	75	75	37.46079$_0$	$^1\Sigma_g^+$	0.10165	0.00034	2.104$_0$	314.8	1.25	2.7
As_2^+	75	75	.....	$(^2\Sigma_g^+)$	.....	.....	.....	443	2	
AsCl	75	(35)	(23.841218)	$(^3\Sigma^-)$	.....	.....	.....	(≥680)	(2.7)	
AsF	75	19	15.155352$_7$	$(^3\Sigma^-)$	.....	.....	.....			

AsH	75	1	0.99448817	$^2\Sigma^+$	[7.199$_4$]	.....	[1.5344]	.....	.....	.....	<3.6
	75	2	1.9613749$_3$	$^2\Sigma^-$	[3.669$_4$]	.....	[1.5304]	.....	.....	.....	2.7$_6$
AsN	75	14	11.797993$_1$	$^1\Sigma^+$	0.5457	0.0038	1.618$_1$	1068.0	5.33	(6.5)	
AsO	75	16	13.809333$_4$	$^2\Pi_r$	0.48519	0.003320	1.6236	966.5$_6$	4.88	≤4.980$_4$	
				$A = +1027$							
AsO^+	75	16	.....	$^1\Sigma^+$	0.5199	0.0031	1.568$_4$	[1091.32]	(5)	(7.7)	
Au$_2$	197	197	98.483276	$^1\Sigma_g^+$	0.028013	0.0000723	2.4719	190.9	0.420	2.2$_3$	
AuBa	197	(138)	(81.11371)	$(^2\Sigma^+)$	.....	.....	.....	128.8	0.18	(2.8)	
AuBe	197	9	8.5178757	$^2\Sigma^+$	0.40074	0.00400	2.0605	607.68	3.53	(3.2)	
AuBi	197	209	101.39785$_6$	.....	.....	.....	.....	157.7	0.25	(2.6)	
AuCa	197	40	33.222141$_3$	$(^2\Sigma^+)$	.....	.....	.....	220.0	0.62	(2.4)	
AuCl	197	35	29.596607$_4$	$(^1\Sigma^+)$	.....	.....	.....	382.8	1.30	(3.5)	
AuCr	197	(52)	(41.101862$_1$)	.....	.....	.....	.....	.....	.....	2.1$_9$	
AuCu	197	(63)	(47.692224)	.....	.....	.....	.....	250	0.7	2.3$_6$	
AuGa	197	69	51.05848$_4$	$(1^1\Sigma)$	.....	.....	.....	225.62	0.567	(2.0)	
AuGe	197	(74)	(53.74919)	$(^2\Pi_i)$	.....	.....	.....	[251.7]	.....	.....	
				$A = +1550$							
AuH	197	1	1.00269470	$^1\Sigma^+$	7.2401	0.2136	1.5238	2305.01	43.12	3.2$_2$	
	197	2	1.99371525	$^1\Sigma^+$	3.6415	0.07614	1.5238	1634.98	21.655	3.2$_6$	
AuMg	197	24	21.381386$_7$	$^1\Sigma^+$	0.13214	0.00073	2.4427	307.9	1.1	(2.6)	
AuPb	197	(208)	(101.160960)	$(^2\Pi_i)$	.....	.....	.....	158.6	0.6	(1.4)	
AuPd	197	(106)	(68.87247)	.....	.....	.....	.....	.....	.....	1.4$_4$	
AuSe	197	(80)	(56.850286)	$(^2\Pi)$	.....	.....	.....	270	.....	.....	
AuSi	197	28	24.497348$_6$	$(^2\Pi_i)$	.....	.....	.....	[391.2]	(1.35)	3.2$_3$	
				$A = +1070$							
AuSn	197	(120)	(74.53153)	$(^2\Pi_i)$	.....	.....	.....	190.4	(1.26)	2.4$_9$	
				$A = +2550$							
AuSr	197	(88)	(60.77977)	$(^2\Sigma^+)$	.....	.....	.....	153.33	0.19	(2.6)	
AuTe	197	(130)	(78.27889)	$(^2\Pi)$	.....	.....	.....	212.5	0.50	(2.8)	
AuU	197	238	107.78430$_2$	.....	.....	.....	.....	.....	.....	3.2$_3$	
B_2	11	11	5.5046525$_3$	$^3\Sigma_g^-$	1.212	0.014	1.590	1051.3	9.35	2.9	
BaBr	(138)	79	(50.19401$_8$)	$^2\Sigma^+$	.....	.....	.....	193.8	0.42	(4.3)	
BaCl	138	35	27.895369	$^2\Sigma^+$	.....	.....	.....	279.3	0.89	4.5$_6$	
BaF	(138)	19	(16.098012$_6$)	$^2\Sigma^+$	[0.2158$_3$]	.....	[2.1624]	468.9	1.79	6.05	
BaH	(138)	1	(1.00051336)	$^2\Sigma^+$	3.38285	0.06599	2.2317	1168.31	14.50	≤1.95	
	(138)	2	(1.9851098$_7$)	$^2\Sigma^+$	1.70712	0.02369	2.2303	829.89	7.35	≤I≤1.97	
	(138)	16	14.332553$_3$	$^1\Sigma^+$	0.3126146	0.0013935	1.9397	669.8$_1$	2.954	≥5.74	
BaO	138	(32)	(25.954702)	$^1\Sigma^+$	[0.10308]	.....	[2.1102]	377.1	1.22	4.37	
BaS	(138)	79	9.6615017	$^1\Sigma^+$	0.490	0.0035	1.887	684.31	3.52	4.49	
BBr	11	12	(5.7416023$_6$)	.....	.....	.....	.....	.....	.....	4.6$_0$	
BC	(11)	35	8.3731666	$^2\Sigma^+$	0.6838	0.00646	1.715$_6$	839.12	5.11	5.5$_1$	
BCl	11	(79)	(8.0885079)	$(^2\Sigma^+)$	.....	.....	.....	713.8	3.5	(4.3)	
BeBr	9	35	7.1654925	$(^2\Sigma^+)$	.....	.....	.....	846.4	5.14	3.9$_6$	
BeCl	9										

TABLE 7g-1. CONSTANTS OF DIATOMIC MOLECULES (*Continued*)

(1)	m_1 (2)	m_2 (2)	μ (3)	Ground state (4)	B_e (5)	α_e (6)	r_e (7)	ω_e (8)	$\omega_e x_e$ (9)	$D_0°$ (10)
BeF	9	19	8.1125863	$^2\Sigma^+$	1.4877	0.01685	1.3615	1265.6	9.12	5.8_5
BeH	9	1	0.90645600	$^2\Sigma^+$	10.308	0.300	1.3432	2058.6	35.5	(2.1)
	9	2	1.6461989$_0$	$^2\Sigma^+$	5.6807	0.1218	1.3426			
BeH^+	9	1	.....	$^1\Sigma^+$	10.7996	0.2935	1.3123	2221.7	39.79	(3.2)
	9	2	.....	$^1\Sigma^+$	5.9546	0.1233	1.3114	1647.64	21.85	
BeO	9	16	5.7643286	$^1\Sigma^+$	1.6510	0.0190	1.3309	1487.323	11.8297	4.6_4
BeS	9	32	7.0304618	$^1\Sigma^+$	0.79059	0.00664	1.7415	997.94	6.137	(4.1)
BF	11	19	6.9701832	$^1\Sigma^+$	1.516_8	0.019_8	1.2629	1402.1_3	11.8_4	7.8_1
BH	11	1	0.92330324	$^1\Sigma^+$	12.021	0.412	1.2324	2366.9_0	49.39_8	3.42
	11	2	1.70261630	$^1\Sigma^+$	6.54_2	0.17_1	1.230_2	1759	(28)	3.46
BH^+	11	1	.....	$^2\Sigma^+$	[12.374]	.....	[1.2147]	.....	.....	1.95
Bi_2	209	209	104.49020$_8$	$^1\Sigma_g^+$	0.022806	0.000050	2.6597	172.71	0.3227	2.04
BiBr	209	79	57.28537_7	.....	.....	.....	.....	209.50	0.466	2.74
BiCl	209	35	29.956251_8	(O^+)	(0.115)	.....	(2.21)	308.0	0.96	3.08
BiF	209	19	17.4151901	O^+	0.231_8	0.0015	2.04_5	512.6	2.3_4	(3.4)
BiH	209	1	1.00298823	O^+	5.137	0.148	1.808_8	1698.9	31.6	(2.7)
	209	2	1.9948760$_6$	O^+	2.592	0.054	1.805_6	1205.5	16.1	
BiI	209	127	78.95721$_0$	.....	.....	.....	.....	163.9	0.31	(2.7)
BiO	209	16	14.8577356	$^2\Pi$	0.3034	0.0022	1.934	692.4	4.34	3.4_7
BiPb	209	(208)	(104.23866_1)	.....	.....	.....	.....	.....	.....	1.4_2
BiS	209	32	27.729687_7	$^2\Pi$	[0.112764]	.....	[2.3219]	408.71	1.46	3.1_7
BiSe	209	80	57.80949_6	$\frac{1}{2}$	.....	.....	.....	[264.8]	(0.4)	2.80
BiTe	209	(130)	(80.10914)	$(\frac{1}{2})$	.....	.....	.....	208.5	0.52	2.39
BN	11	14	6.1635126$_8$	$^3\Pi$	1.666	0.025	1.281	1514.6	12.3	(5.1)
BO	11	16	6.5209399$_8$	$^2\Sigma^+$	1.7820	0.0166	1.2044	1885.69	11.810	8.2_9
Br_2	79	81	39.95242$_9$	$^1\Sigma_g^+$	0.081101	0.000321	2.2809	323.33	1.081	1.9704_8
Br_2^+	79	81	.....	$^2\Pi_{g\frac{1}{2}}$	.....	.....	.....	(376)	(1.25)	3.25
				$A = -3150$						
BrCl	79	35	24.231733	$^1\Sigma^+$	0.152469_8	0.000775	2.1361	443.5*	1.8*	2.233
BrF	79	19	15.312218$_4$	$^1\Sigma^+$	0.355843	0.002612	1.7589	672.6	4.5	2.384
BrO	79	16	13.2994297	$^2\Pi_{\frac{1}{2}}$	[0.427789]	.....	[1.7213]	$778._7$*	6.8_2*	2.39_7
BS	11	32	8.1893677	$^2\Sigma^+$	0.7948$_9$	0.0060_5	1.6092	1180.17	6.31	6.2_0
BS'	(11)	(28)	(7.9003922)	.....	.....	.....	.....	.....	.....	2.9_5
C_2	12	12	6.0000000	$^1\Sigma_g^+$	1.8198_4	0.0176_5	1.2425	1854.71	13.34_0	6.2_4
$C_2(^3)$	12	12	.....	$(^3\Sigma_g^+)$	1.7468_5	0.0167	1.2682	1781.04	11.58_5	(8.4)
CaBr	(40)	79	(26.528909)	$^2\Sigma^+$	.....	.....	.....	285.3	0.86	(3.9)
CaCl	(40)	35	(18.649660_3)	$^2\Sigma^+$	0.15195	0.00078_3	2.4390	369.8	1.31	4.0_8
CaF	40	19	12.8767409	$^2\Sigma^+$	[(0.3510)]	.....	[(1.931)]	587.1	2.74	5.4_8

CaH	(40)	1	(0.98303388)	$^1\Sigma^+$	4.2778	0.0963	2.0022	1299	19.5	$\leq$1.70
	(40)	2	(1.9174626$_4$)	$^1\Sigma^+$	2.196	0.035	2.001			
CaI	(40)	127	(30.392038)	($^1\Sigma^+$)	.....	.....	.....	242.0	0.64	(3.3)
CaO	(40)	16	(11.4229222)	$^1\Sigma^+$	0.4444	0.0034	1.822$_3$	733.4	5.28	4.0$_3$
CaS	40	32	17.761768$_8$	$^1\Sigma$	0.17667	0.000837	2.3178	462.23	1.78	3.4$_6$
CBr	12	(79)	(10.4161613)	$^2\Pi_r$	[0.4872]	.....	[1.822$_6$]	.....	.....	$\leq$4.11
				A = +466						
CCl	12	35	8.9341385$_5$	$^2\Pi_r$	0.6970	0.0067	1.645$_3$	[866.1]	(6.2)	(3.8)
				A_0 = +135						
Cd$_2$	(112)	(114)	(56.44717)	.....	.....	.....	.....	.....	.....	0.08
CdBr	(114)	(79)	(46.61856$_7$)	($^2\Sigma$)	.....	.....	.....	230.0	0.50	(1.6)
CdCl	(114)	35	(26.754971)	$^2\Sigma$	.....	.....	.....	330.5	1.2	2.1
CdF	(114)	19	(16.282573$_0$)	($^2\Sigma$)	.....	.....	.....	(535)		
CdH	(114)	1	(0.99898613)	$^2\Sigma^+$	5.437	0.218	1.761$_7$	1430.7	46.3	0.678
	(114)	2	(1.9791066$_0$)	$^2\Sigma^+$	2.788	0.168	1.748	.....	.....	0.704
CdH$^+$	(114)	1	.....	$^1\Sigma^+$	6.071	0.189	1.667$_2$	1775.4	37.3	(2.0)
	(114)	2	.....	$^1\Sigma^+$	3.075	0.0682	1.664	1262.5	19.01	
CdI	(114)	127	(60.02651)	$^2\Sigma$	.....	.....	.....	178.5	0.325	(1.4)
CdO	(114)	16	(14.025397$_7$)	.....	.....	.....	.....	.....	.....	$\leq$3.8
CdS	(114)	(32)	(24.964643)	.....	.....	.....	.....	.....	.....	$\leq$2.0
CeO	(140)	16	(14.3538823)	($^1\Phi$)	[0.35687]	.....	[1.8141]	(830)	.....	8.1$_8$
					(constants for Ω = 3 component)					
CeS	(140)	(32)	(26.024731$_2$)	.....	.....	.....	.....	.....	.....	5.9$_0$
CF	12	19	7.3545996$_3$	$^2\Pi_r$	1.4172$_0$	0.0184$_0$	1.2717	1308.1	11.10	5.4$_2$
				A_0 = +77						
CH	12	1	0.92974056	$^2\Pi_r$	14.457	0.534	1.1199	2859.1	63.3	3.47
				A = +28						
	12	2	1.72463608	$^2\Pi_r$	7.808	0.212	1.1189	2099.0	34.1	3.52
CH$^+$	12	1	.....	$^1\Sigma^+$	14.177$_6$	0.4917	1.1309	[2739.70]	.....	4.09
Cl$_2$	35	35	17.484427$_3$	$^1\Sigma_g^+$	0.24407	0.00153	1.9375	559.71	2.70	2.4795$_0$
Cl$_2^+$	35	35	.....	$^3\Pi_{0,1}$	0.2696	0.00166	1.891	645.2	3.00$_2$	4.01
ClF	35	19	12.3102870	$^1\Sigma^+$	0.5164802	0.0043585	1.6283	786.34	6.23	2.56
ClO	35	16	10.9749310	$^2\Pi_i$	[0.620525]	.....	[1.5733]	868	7.5	2.746
				A = −282						
CN	12	14	6.46219328	$^2\Sigma^+$	1.8992	0.01701	1.1720	2068.745	13.134	7.91
CN$^+$	12	14	.....	$^1\Sigma$	1.8964	0.0188	1.1728	2033.05	16.14	4.9$_5$
					(constants for lowest observed $^1\Sigma$ state)					
CO	12	16	6.85620870	$^1\Sigma^+$	1.931271	0.017513	1.1283	2169.8233	13.2939	11.09$_1$
CO$^+$	12	16	.....	$^2\Sigma^+$	1.97720	0.01896	1.1151	2214.24	15.164	8.34
Co$_2$	59	59	29.466504$_6$	.....	.....	.....	.....	.....	.....	1.6$_9$
CoBr	59	(79)	(33.738542)	.....	.....	.....	.....	(320)		
CoCl	59	(35)	(21.946552$_3$)	.....	.....	.....	.....	(420)		
CoH	59	1	0.99088003	($^3\Phi$)$_4$	[7.151]	.....	[1.5424]	(1890)		
	59	2	1.0475429$_1$	($^3\Phi$)$_4$	[3.722]	.....	[1.525$_0$]			

TABLE 7g-1. CONSTANTS OF DIATOMIC MOLECULES (*Continued*)

(1)	m_1 (2)	m_2 (2)	μ (3)	Ground state (4)	B_e (5)	α_e (6)	r_e (7)	ω_e (8)	$\omega_e x_e$ (9)	$D_0°$ (10)
CoO	59	16	12.5804778	.....	.....	.....	.....	(850)	(6)	3.7_5
CP	12	31	8.6491182_4	$^2\Sigma^+$	0.7986	0.00597	1.5622	1239.67	6.86	(6.9)
Cr_2	(52)	(52)	(25.970256_9)	.....	.....	.....	.....	.....	.....	1.6
CrBr	(52)	(79)	(31.324279)	.....	.....	.....	.....	.....	.....	3.3_6
CrCl	(52)	(35)	(20.898785_7)	$(^2\Sigma^+)$	.....	.....	.....	(292)	.....	3.7_5
CrF	(52)	19	(13.9103741)	$(^2\Sigma^+)$	.....	.....	.....	(536)	.....	4.5_7
CrH	(52)	1	(0.98864215)	$^2\Sigma^+$	6.220	0.179	1.655_7	[1581]		
	(52)	2	(1.9389166_4)	$^2\Sigma^+$	[3.142]	.....	$[1.663_5]$			
CrI	(52)	127	(36.855837)	.....	.....	.....	.....	.....	.....	2.9_4
CrO	(52)	16	(12.2290256)	$^9\Pi$	0.5286	0.0050	1.614_9	898.8	6.5	4.3_4
				A = 110	(constants for lowest observed state)					
CS	12	32	8.72519425	$^1\Sigma^+$	0.82005	0.00592	1.5349	1285.08	6.46	7.8_8
Cs_2	133	133	66.45255	$^1\Sigma_g^+$	(0.0127)	0.000026_4	(4.4_7)	42.0164	0.08102	0.45_0
CsBr	133	79	49.51600_4	$^1\Sigma^+$	0.03606939	0.00012410_1	3.0722	149.5	0.36	4.1_6
CsCl	133	35	27.684694	$^1\Sigma^+$	0.07209140	0.00033753	2.9063	209*	0.75	4.5_5
CSe	12	(80)	(10.4333609_4)	$^1\Sigma^+$	0.58_0	0.004	1.67	1035.9	4.8_4	(6.8)
CsF	133	19	16.622294_8	$^1\Sigma^+$	0.18436969	0.00117571	2.3453	353	1.7	5.1_6
CsH	133	1	1.00024035	$^1\Sigma^+$	2.708_5	0.057_0	2.494_5	891.2_9	12.79	(1.9)
CsHg	133	(202)	(80.15787)	$(^1\Sigma^+)$	.....	.....	.....	.....	.....	$D_e = 0.048_2$
CsI	133	127	64.91771	$^1\Sigma^+$	0.02362732	0.00006825_7	3.3152	119.2	0.25	3.4_0
CsRb	133	(85)	(51.81051)	$^1\Sigma^+$	.....	.....	.....	49.4		
Cu_2	63	63	31.464797	$^1\Sigma_g^+$	0.10874	0.000614	2.2197	266.1	1.025	1.97
CuBr	63	81	35.399211	$^1\Sigma^+$	0.1008	0.0004_7	2.7_4	313.4	1.05	3.4_2
CuCl	63	35	22.478148_0	$^1\Sigma^+$	0.17818_5	0.00101	2.0515	417.74	1.65	3.8_2
CuF	63	19	14.5928365	$^1\Sigma^+$	0.3794029	0.0032298	1.7449	622.6_5	3.95	4.4_2
CuH	63	1	0.99193919	$^1\Sigma^+$	7.938	0.249	1.4632	1940.4	37.0	2.73
	63	2	1.9516387_4	$^1\Sigma^+$	4.0375	0.09140	1.4627	1384.38	19.14	2.76
CuI	63	127	42.068553	$^1\Sigma^+$	0.0735	0.0003	2.33_5	264.50	0.60	<3.27
CuO	63	16	12.7533705	$^2\Pi_{(r)}$	[(0.4429)]	.....	[(1.727$_6$)]	633*	$4._5$*	2.7_2
				A = (+)272						
CuS	(63)	(32)	(21.200782_6)	$(^2\Pi)$	.....	.....	.....	414.2	1.70	2.9_0
				A = (433)						
CuSe	(63)	(80)	(35.206516)	$(^2\Pi)$	.....	.....	.....	300.0	0.50	
				A = (1590)						
CuSn	(63)	(120)	(41.26960_1)	.....	.....	.....	.....	.....	.....	1.8_0
CuTe	(63)	(130)	(42.39334_7)	$(^2\Pi)$	.....	.....	.....	254.0	1.01	
DyO	(164)	16	(14.572994_2)	.....	.....	.....	.....	.....	.....	6.5_2
ErO	(166)	16	(14.588638_4)	.....	.....	.....	.....	.....	.....	6.5_8

EuO	(153)	16	(14.480329$_9$)							5.8$_0$
F_2	19	19	9.4992023	$^1\Sigma_g^+$	[0.8828]		[1.4178]	[891.8$_5$]	(15.6)	1.60
F_2^+	19	19		$^2\Pi_{g,i}$	[≥1.010]	(0 01)	[≤1.326]	≥1073	9	3.2$_9$
FeBr	(56)	(79)	(32.734038)					(300)		
FeCl	(56)	35	(21.517041$_0$)	($^6\Sigma$)				406.6	1.2	
				or ($^4\Sigma$)				397.0	1.6	
FeO	(56)	16	(12.4381535)	$^{5(?)}\Sigma_0$	0.51271	0.00376	1.625$_9$	880.53	4.63	3.9$_2$
FeS	(56)	(32)	(20.343723$_0$)							3.3$_1$
Ga_2	(69)	(71)	(34.95548$_6$)	($^3\Sigma$)						(1.2)
GaBr	69	81	37.22062$_7$	$^1\Sigma^+$	0.081839$_2$	0.0003207	2.3525	263.1	0.81	4.31
GaCl	69	35	23.199027	$^1\Sigma^+$	0.149895	0.000776	2.2018	365.3	1.2	4.92
GaF	69	19	14.893279$_4$	$^1\Sigma^+$	0.3590$_5$	0.0028$_2$	1.7755	622.2	3.2	5.9$_8$
GaH	(69)	1	(0.99330126)	$^1\Sigma^+$	6.137	0.181	1.662$_9$	1604.52	28.77	2.87
	(69)	2	(1.9569183$_7$)	$^1\Sigma^+$	[3.083]		[1.671$_6$]			
GaI	69	127	44.66612$_6$	$^1\Sigma^+$	0.056934$_7$	0.000189	2.3747	216.6	0.5	3.47
GaO	69	16	12.982250$_0$	$^2\Sigma$	[(0.4271)]		[(1.743$_6$)]	767.5	6.24	3.9$_1$
GaTe	(69)	(130)	(45.03244$_3$)							2.6
GdO	(158)	16	(14.523901$_0$)					841.0	3.70	7.5$_0$
								or 830.0	2.25	
Ge_2	(74)	(72)	(36.45387$_0$)							2.8$_1$
GeBr	74	79	38.16902$_8$	$^2\Pi_r$				295.$_4$	0.7$_2$	≤3.5
				A = +1150						(2.6?)
GeCl	74	35	23.738983	$^2\Pi_r$				406.6	1.30	≤4.4
				A = +975						(3.5?)
GeCo	(74)	59	(32.79086$_8$)							2.4$_3$
GeCr	(74)	(52)	(30.50573$_3$)							1.7$_2$
GeCu	(74)	(63)	(33.99198$_1$)							2.0$_7$
GeF	(74)	19	(15.113976$_0$)	$^2\Pi_r$				665.2	2.80	5.0$_0$
				A = +935						
GeFe	(74)	(56)	(31.84120$_9$)							2.1$_4$
GeH	72	1	0.99389792	$^2\Pi_r$	6.727	0.193	1.587$_9$	1908	37	2.9$_5$
				A = +891						
	72	2	1.9592356$_0$	$^2\Pi_r$	3.413	0.070	1.587$_8$	1359	10	
GeI	(74)	127	(46.71177$_5$)	$^2\Pi_{\frac{1}{2}}$				246.1	0.5$_0$	
GeNi	(74)	(58)	(32.47960$_7$)							2.8$_8$
GeO	74	16	13.149624$_7$	$^1\Sigma^+$	0.4856961	0.0030756	1.6246	985.$_5$*	4.29*	6.78
GeS	74	32	22.318826	$^1\Sigma^+$	0.1865653	0.0007486	2.0121	575.8	1.80	5.676
GeSe	(74)	(80)	(38.40100$_3$)	$^1\Sigma^+$				408.7	1.36	4.9$_1$
GeSi	(74)	(28)	(20.295639)							3.0$_8$
GeTe	74	130	47.11256	$^1\Sigma^+$	0.06533820	0.00017246	2.3402	323.9*	0.75*	4.2$_2$
H_2	1	1	0.50391261	$^1\Sigma_g^+$	60.864	3.07638	0.74138	4400.39	120.815	4.47800
	1	2	0.67171136	$^1\Sigma_g^+$	45.6378	1.95004	0.74155	3811.924	90.7113	4.51369
	2	2	1.00705110	$^1\Sigma_g^+$	30.442	1.0623	0.74154	3118.46	64.097	4.55618
H_2^+	1	1		$^2\Sigma_g^+$	29.8	1.4	1.06$_0$	2321.8	66.3	2.65056

TABLE 7g-1. CONSTANTS OF DIATOMIC MOLECULES (*Continued*)

(1)	m_1 (2)	m_2 (2)	μ (3)	Ground state (4)	B_e (5)	α_e (6)	r_e (7)	ω_e (8)	$\omega_e x_e$ (9)	$D_0°$ (10)
HBr	1	81	0.99542703	$^1\Sigma^+$	8.46488	0.23328	1.4144	2648.975	45.217$_5$	3.759
	2	81	1.9651864$_1$	$^1\Sigma^+$	4.287$_6$	0.083$_8$	1.4144	1884.75	22.71$_8$	3.806
	3	81	2.9076698$_6$	$^1\Sigma^+$	2.8974	0.0459	1.4146	[1519.26]	.....	3.828
HBr^+	1	.....	.....	$^2\Pi_i$ $A_0 = -2652$	8.072$_0$	0.236$_2$	1.4484	[2348.2$_5$]	(45.4)	3.93$_5$
HCl	1	35	0.97959272	$^1\Sigma^+$	10.59341$_6$	0.30718$_1$	1.2745	2990.946$_3$	52.8186	4.4333
	2	35	1.9044136$_2$	$^1\Sigma^+$	5.448794	0.113291$_1$	1.2746	2145.163	27.1825	4.4849
	3	35	2.7765712$_6$	$^1\Sigma^+$	3.7458	0.0611	1.2731	[1735.5$_1$]	.....	4.509$_5$
HCl^+	1	35	.....	$^2\Pi_i$ $A_0 = -643$	9.9463	0.3183	1.3154	2675.4	53.5	4.70$_6$
	2	35	.....	$^2\Pi_i$ $A_0 = -643$	5.1158	0.1170	1.3154	[1863.96]	.....	4.75$_7$
He_2	4	4	2.00130180$_6$	.....	.....	.....	.....	.....	.....	$D_e = 0.00097$
He_2^+	4	4	.....	$^2\Sigma_u^+$	7.211	0.224	1.080$_8$	1698.$_8$	35.$_3$	2.2$_0$
HF	1	19	0.95705545	$^1\Sigma^+$	20.9557	0.798$_0$	0.91680	4138.32	89.88	5.85$_9$
	2	19	1.82104538	$^1\Sigma^+$	11.000	0.2907	0.9174	2998.19$_2$	45.76$_1$	5.92$_8$
	3	19	2.6028411$_5$	$^1\Sigma^+$	7.692	0.1757	0.9176	2508.54	32.54	5.95$_9$
HF^+	1	19	.....	$^2\Pi_i$	.....	.....	.....	3140	90	3.40 (H$^+$ + F)
HIO	(180)	16	(14.689234$_4$)	$^1\Sigma^+$	[0.3860]	.....	[1.724]	(968)	.....	7.9
Hg_2	(200)	(202)	(100.482250)	$^1\Sigma_g^+$	.....	.....	3.3	[36)	.....	0.07$_1$
HgBr	(202)	79	(56.74551$_1$)	($^2\Sigma^+$)	.....	.....	.....	188.13	0.9665	0.71
HgCl	(202)	35	(29.807955$_3$)	$^2\Sigma^+$	.....	.....	[2.23]	292.61	1.6025	1.0$_4$
HgF	(202)	19	(17.3649659)	($^2\Sigma^+$)	.....	.....	.....	490	3.8	(1.9)
HgH	(202)	1	(1.00282118)	$^2\Sigma^+$	5.549$_9$	0.312	1.7405	1387.09	83.01	0.376
	(202)	2	(1.9942153$_7$)	$^2\Sigma^+$	2.7989	0.1133	1.7379	995.15	49.93	0.398
HgH^+	(202)	1	.....	$^1\Sigma^+$	6.613	0.206	1.594$_4$	2033.87	46.16	(2.3)
	(202)	2	.....	$^1\Sigma^+$	3.328	0.0736	1.593$_7$	1442.15	23.24	(2.4)
HgI	(202)	127	(77.93524$_4$)	($^2\Sigma^+$)	.....	.....	.....	125.0	1.0	0.35
HgS	(202)	(32)	(27.602570$_1$)	.....	.....	.....	.....	.....	.....	$\leq$2.1$_7$
HgTl	(202)	(205)	(101.73073$_0$)	.....	.....	.....	.....	26.9	0.69	(0.031)
HI	1	127	0.99988452	$^1\Sigma^+$	6.5108$_3$	0.1686$_4$	1.6092	2308.09$_1$	38.981$_0$	3.056$_8$
	2	127	1.9826357$_3$	$^1\Sigma^+$	3.28414	0.06129	1.6090	1639.939	20.087	3.097$_6$
	3	127	2.9460330$_4$	$^1\Sigma^+$	[2.19326]	.....	[1.6152]			
HI^+	1	127	.....	$^2\Pi_{\frac{3}{2}}$ $A = -13470$	.....	.....	.....	(2170)	.....	3.13
HoO	165	16	14.580864$_9$	.....	.....	.....	.....	.....	.....	6.6$_2$
I_2	127	127	63.45217$_6$	$^1\Sigma_g^+$	0.037389	0.0001210	2.6656	214.51886	0.60738	1.5424$_4$

I_2^+	127	127	....	$^2\Pi_{g,\frac{1}{2}}$ $A = -5080$	.....	.....	.....	.....	.....	2.72
IBr	127	79	48.65878$_2$	$^1\Sigma^+$	0.056788	0.000199	2.4699	268.71	0.83	1.817
ICl	127	35	27.414665$_6$	$^1\Sigma^+$	0.1141556	0.0005357	2.3209	384.293	1.501	2.15306
IF	127	19	16.5245694	$^1\Sigma^+$	0.2799$_5$	0.00188$_7$	1.908$_9$	608.1$_9$	2.4$_5$	2.88
In$_2$	(115)	(115)	(57.45204)	.....	.....	.....	.....	.....	.....	0.8$_5$
InBr	115	81	47.48032$_7$	$^1\Sigma^+$	0.0548943	0.0001862	2.5432	221.0	0.65	3.9$_9$
InCl	115	35	26.809804	$^1\Sigma^+$	0.1090580$_3$	0.0005177$_9$	2.4012	317.4	1.01	4.44
InF	115	19	16.302865$_3$	$^1\Sigma^+$	0.2624$_7$	0.0018$_6$	1.9848	535.3$_5$	2.6$_4$	5.2$_1$
InH	115	1	0.99000243	$^1\Sigma^+$	4.994$_5$	0.142$_8$	1.8380	1476.0$_4$	25.61	2.49
	115	2	1.9794060$_6$	$^1\Sigma^+$	2.523	0.051	1.837	1048	12.4	2.52
InI	115	127	60.30322	$^1\Sigma^+$	0.03685$_7$	0.0001040	2.7540	177.1	0.4	3.4$_3$
InO	115	16	14.040451$_3$	$(^2\Sigma)$	.....	.....	.....	703.09	3.71	$\leq$3.2$_5$
InS	(115)	(32)	(25.012376)	.....	.....	.....	.....	.....	.....	2.9$_4$
InSb	(115)	(121)	(58.91379)	.....	.....	.....	.....	.....	.....	1.5$_4$
InSe	(115)	(80)	(47.13430$_4$)	.....	.....	.....	.....	.....	.....	2.5$_0$
InTe	(115)	(130)	(60.97284)	.....	.....	.....	.....	.....	.....	2.1$_9$
IO	127	16	14.2045817	$^2\Pi_{\frac{1}{2}}$	0.34026	0.00269$_6$	1.8676	681.4$_7$	4.2$_9$	1.9
IrC	(193)	12	(11.2974351$_3$)	.....	.....	.....	.....	.....	.....	6.4$_4$
IrO	(193)	16	(14.7705681)	.....	.....	.....	.....	.....	.....	(3.6$_4$)
K$_2$	39	39	19.481857$_0$	$^1\Sigma_g^+$	0.056743	0.000165	3.9050	92.021	0.2829	0.514
KBr	39	79	26.084986	$^1\Sigma^+$	0 08122108	0.00040481	2.8208	213*	0.80	3.94
KCl	39	35	18.429177$_7$	$^1\Sigma^+$	0.1286347	0.0007899	2.6656	281*	1.3$_0$	4.35
KF	39	19	12.7712448	$^1\Sigma^+$	0.2799373$_9$	0.0023349$_1$	2.1714	426	2.4	5.07
KH	39	1	0.98241435	$^1\Sigma^+$	3.412$_3$	0.081$_7$	2.242$_5$	983.6	14.3$_1$	1.8$_8$
	39	2	1.9151069$_8$	$^1\Sigma^+$	1.753$_9$	0.0318	2.240$_3$	706.$_6$	7.7$_1$	1.8$_9$
KHg	(39)	(202)	(32.662532$_6$)	$(^2\Sigma^+)$	.....	.....	.....	.....	.....	0.046$_6$
KI	39	127	29.810831	$^1\Sigma^+$	0.06087472	0.00026776	3.0478	187	0.57	3.4$_0$
Kr$_2$	(84)	(84)	(41.955752$_0$)	.....	.....	.....	.....	.....	.....	(0.015)
Kr$_2^+$	(84)	(84)	.....	.....	.....	.....	.....	.....	.....	$\geq$0.995
La$_2$	139	139	69.45303	.....	.....	.....	.....	.....	.....	2.5$_0$
LaF	139	19	16.712596$_0$	$^1\Sigma^-$	[0.2458]	.....	[2.028]	(550)		
LaO	139	16	14.343296$_5$	$^2\Sigma^-$	0.3526	0.0014	1.826	811.6	2.23	8.2$_5$
LaS	139	(32)	(25.989954)	.....	.....	.....	.....	.....	.....	5.9$_4$
Li$_2$	7	7	3.5080027	$^1\Sigma_g^+$	0.6727$_2$	0.00704	2.6727	351.43$_4$	2.592	1.117
LiBr	7	79	6.443192$_1$	$^1\Sigma^+$	0.555394$_8$	0.0056402	2.1704	563.2*	3.5$_1$*	4.3$_4$
LiCl	7	35	5.8435748	$^1\Sigma^+$	0.706525	0.008012	2.0207	641*	4.2^b	4.8$_4$
LiCs	7	133	6.664204$_7$	$^1\Sigma^+$	.....	.....	.....	(167)		
LiF	7	19	5.1238105	$^1\Sigma^+$	1.345261	0.020300	1.5639	910.34	7.929	5.9$_8$
LiH	7	1	0.88123834	$^1\Sigma^+$	7.5131	0.2132	1.5957	1405.649	23.200	2.4289
	7	2	1.5648708$_1$	$^1\Sigma^+$	4.233107	0.091550	1.5951	1055.12	13.228	2.451$_0$
LiI	7	127	6.048441$_1$	$^1\Sigma^+$	0.443181$_9$	0.004090	2.3919	498.1$_6$	3.3$_9$	3.5$_7$
LiK	(7)	(39)	(5.9454392)	$^1\Sigma^+$	.....	.....	.....	(207)		
LiO	7	16	4.8768327	$^2\Pi_i$	.....	.....	(1.62)	(745)	.....	3.5$_2$

TABLE 7g-1. CONSTANTS OF DIATOMIC MOLECULES (*Continued*)

(1)	m_1 (2)	m_2 (2)	μ (3)	Ground state (4)	B_e (5)	α_e (6)	r_e (7)	ω_e (8)	$\omega_e x_e$ (9)	D_0° (10)
LiRb	(7)	(85)	(6.480537_8)	$^1\Sigma^+$	.....	.....	.....	(185)		
LuO	(175)	16	(14.655002_3)	.....	.....	.....	.....	341.6	3.30	7.2_3
Mg_2	24	24	11.9925223	$^1\Sigma_g^+$	0.0928_7	0.00378	3.891	51.12	1.64_5	0.0495
MgBr	24	79	18.394535_4	($^2\Sigma^-$)	.....	.....	.....	373.8	1.34	≤ 3.35
MgCl	24	35	14.226871_3	$^2\Sigma^+$	0.24502	0.0015_8	2.1991	[162.12]	(2.05)	3.2_6
MgF	24	19	10.6012335	$^2\Sigma^+$	0.51922	0.00470	1.7500	[711.69]	(4.94)	4.7_5
MgH	(24)	1	(0.96718516)	$^2\Sigma^+$	5.818	0.1668	1.730_4	1197.0	32.4	≤ 2.49
	(24)	2	(1.8580737_0)	$^2\Sigma^+$	3.0307	0.0654	1.7302	1077.76	16.09	
MgH^+	(24)	1	.....	$^1\Sigma^+$	6.411	0.206	1.648_4	1395.3	30.2	(2.1)
	(24)	2	.....	$^1\Sigma^+$	3.321	0.064	1.652_8	1226.6	16.30	
MgI	(24)	127	(20.172435_0)	($^1\Sigma^+$)	.....	.....	.....	[312]	.....	(2.4)
MgO	24	16	9.5957763	$^1\Sigma^+$	0.5743	0.0050	1.749_0	785.0_6	5.4_4	3.5_3
MgS	(24)	(32)	(13.7042728)	(constants for lowest observed state)				525.2	2.93	<2.4
Mn_2	55	55	27.469026_4	($^9\Sigma_g^+$)	.....	.....	.....	.....	.....	0.3_3
MnBr	55	(79)	(32.390087)	($^7\Sigma^+$)	.....	.....	.....	288	(0.9)	3.2_2
MnCl	55	(35)	(21.367888_7)	($^7\Sigma^+$)	.....	.....	.....	383	(0.7)	3.7_6
MnF	55	19	14.1166536	($^7\Sigma^+$)	.....	.....	.....	518.5	2.6	4.3_3
MnH	55	1	0.98066097	$^7\Sigma^+$	5.6841	0.1570	1.7311	1548.0	28.8	(2.5)
	55	2	1.9428738_4	$^7\Sigma^+$	2.8056	0.0514	1.7310	1102.5	13.9	
MnI	55	127	38.340221	($^7\Sigma^+$)	.....	.....	.....	(240)	(1.5)	2.8_8
MnO	55	16	12.3881675	.....	.....	.....	.....	839.5	4.7	3.7_0
MnS	55	(32)	(20.210343_2)	.....	.....	.....	.....	.....	.....	2.9_3
MoO	(98)	16	(13.748766)	.....	.....	.....	.....	.....	.....	5.0
N_2	14	14	7.00153719	$^1\Sigma_g^+$	1.9987	0.01781	1.0976	2358.07	14.188	9.760
N_2^+	14	14	.....	$^2\Sigma_g^+$	1.932	0.020	1.116	2207.19	16.14	8.72
N_2^{++}	14	14	Data for lowest $^1\Sigma_g^+$		[1.8801]	.....	[1.1316]	(1960)		
Na_2	23	23	11.4948863	$^1\Sigma_g^+$	0.15471	0.00079	3.0788	159.23	0.726	0.760
NaBr	23	79	17.303437_7	$^1\Sigma^+$	0.1512532_9	0.0009409_5	2.5020	302*	1.5_1*	3.80
NaCl	23	35	13.370687_6	$^1\Sigma^+$	0.2180630_6	0.0016248	2.3608	366*	2.0*	4.25
NaCs	23	133	19.599477	$^1\Sigma^+$	.....	.....	2.6	(98)	.....	0.69
NaF	23	19	10.4021901	$^1\Sigma^+$	0.4369005_6	0.0045571	1.9259	536	3.4	4.9_3
NaH	23	1	0.96549966	$^1\Sigma^+$	4.9012	0.1353	1.8874	1172.2	19.72	2.0_3
	23	2	1.8518630_2	$^1\Sigma^+$	2.5575	0.0520	1.8866	[826.1$_0$]		
NaI	23	127	19.463752_8	$^1\Sigma^+$	0.1178055_9	0.0006477_7	2.7114	258	1.0_1	3.0_8
NaK	23	(39)	(14.458700_5)	$^1\Sigma^+$	.....	.....	.....	123.29	0.400	0.62_1
NaRb	23	(85)	(18.091511)	$^1\Sigma^+$	.....	.....	.....	106.64	0.455	0.57

NbO	93	16	13.645648$_6$	$(^2\Delta)$	0.4321	0.0021	1.690$_9$	989.0$_3$	3.8$_3$	7.8$_1$
				$\|A\| \approx 15$						
NBr	14	79	11.8928388	$^3\Sigma^-$	0.444	0.0040	1.78$_7$	691.75	4.720	2.9$_0$
NCl	14	35	9.9990236	$^3\Sigma^-$	[0.6468$_5$]	.....	[1.6144]	827.0	5.1	(4.1)
NdF	(142)	19	(16.755233$_3$)	.....	.....	.....	.....	.....	.....	5.8$_7$
NdO	(142)	16	(14.3746906)	.....	.....	.....	.....	.....	.....	7.4$_4$
NF	14	19	8.0613378$_8$	$^3\Sigma$	1.2056$_4$	0.01492	1.370	1141.37	8.09	(4.4)
NH	14	1	0.94016028	$^3\Sigma$	16.667$_6$	0.345$_7$	1.0372	[3125.5$_4$]	(79)	3.5$_9$
	14	2	1.76083610	$^3\Sigma^-$	8.9074	0.2530	1.0367	(2418)	(45)	3.6$_4$
NH^+	14	1	.....	$^3\Pi_r$	[15.35]	.....	[1.081]	[2922]	.....	4.1
				$A = +78$						
	14	2	.....	$^3\Pi_r$	[8.244]	.....	[1.0776]	[2143.04]		
Ni_2	(58)	(58)	(28.967671)	.....	.....	.....	.....	.....	.....	2.3$_6$
NiBr	(58)	(79)	(33.409121)	.....	.....	.....	.....	(315)	.....	3.6$_9$
NiCl	(58)	(35)	(21.806685$_0$)	.....	.....	.....	.....	(410)	.....	3.8$_2$
NiF	(58)	19	(14.3068434)	.....	.....	.....	.....	(740)		
NiH	58	1	0.99059317	$^2\Delta$	7.815	0.231	1.476	2000	40	2.6
	58	2	1.9464350$_5$	$^2\Delta_{\frac{3}{2}}$	4.037	0.090	1.465	1430	20	
				$A_0 = -490$						
NiI	(58)	127	(30.776343)	.....	.....	.....	.....	.....	.....	2.9$_9$
NiO	(58)	16	(12.6343926)	.....	.....	.....	.....	.....	.....	3.7$_5$
NO	14	16	7.4664332$_0$	$^2\Pi_r$	1.7048$_5$	0.0176$_5$	1.1508	1904.12	14.088	6.507
				$A = +123$						
NO^+	14	16	.....	$^1\Sigma^+$	2.002	0.0202	1.002$_0$	2377.1	16.35	10.858
NS	14	32	9.7380290$_2$	$^2\Pi_r$	0.7754$_8$	0.0061	1.4941	1219.6	7.6	(6.0)
				$A = +223$						
NS^+	14	32	.....	$^1\Sigma^+$	(1.09)	.....	(1.20)			
NSe	14	(80)	(11.9152661)	$^2\Pi_r$	.....	.....	.....	$\geq$944	5.4	(5.1)
O_2	16	16	7.99745747	$^3\Sigma_g^-$	1.44567	0.01579	1.2075	1580.361$_3$	12.0730	5.115$_5$
O_2^+	16	16	.....	$^2\Pi_{r,r}$	1.6920	0.01984	1.1161	1903.85	16.18	6.67$_4$
				$A = +195$						
O_2^-	16	16	.....	$^2\Pi_{r,i}$	.....	.....	(1.30)	1108	9	4.1$_0$
OF	16	19	8.8838822$_3$	$^2\Pi_i$	.....	.....	.....	[1028.5] in Ar matrix		
OH	16	1	0.94808710	$^2\Pi_i$	18.867	0.708	0.9707$_8$	3739.94	86.350	4.39$_6$
				$A_0 = -140$						
	16	2	1.78884794	$^2\Pi_i$	9.991	0.258	0.9712	2716.1	42.15	4.45$_7$
OH^+	16	1	.....	$^3\Sigma^-$	16.781	0.724	1.0294	[2955]	(85)	4.8$_1$
	16	2	.....	$^3\Sigma^-$	8.900	0.274$_6$	1.0290	[2187]	(51)	4.8$_6$
OH^-	16	1	.....	$(^1\Sigma^+)$	.....	.....	.....	.....	.....	4.76
P_2	31	31	15.4868817	$^1\Sigma_g^+$	0.30348	0.00143	1.8939	780.89	2.820	5.031
P_2^+	31	31	.....	$^2\Sigma_g^+$	$\geq$0.3038	0.0021	$\leq$1.892$_9$	[$\geq$733.7]	.....	(3.7)
				(not certain that this is the ground state)						
Pb_2	(208)	(208)	(103.988322)	.....	.....	.....	.....	256.5	2.96	1.0$_0$
PbBr	(208)	79	(57.20968$_8$)	$^2\Pi_{\frac{1}{2}}(\frac{1}{2})$	.....	.....	.....	207.5	0.50	2.5

TABLE 7g-1. CONSTANTS OF DIATOMIC MOLECULES (*Continued*)

(1)	m_1 (2)	m_2 (2)	μ (3)	Ground state (4)	B_e (5)	α_e (6)	r_e (7)	ω_e (8)	$\omega_e x_e$ (9)	D_0° (10)
PbCl	(208)	35	(29.935541$_3$)	$^2\Pi_{\frac{1}{2}}(\frac{1}{2})$	.....	.....	.....	303.8	0.88	3.1
PbF	(208)	19	(17.4081885)	$^2\Pi_{\frac{1}{2}}$	0.241$_4$	0.0018	2.00$_2$	507.2	2.30	3.6$_4$
				$A = +8266$						
PbH	(208)	1	(1.00296499)	$^2\Pi_{\frac{1}{2}}$	4.971	0.144	1.838$_8$	1564.1	29.75	$\leq$1.59
				$A = +(8200)$						
PbI	(208)	127	(78.81349$_4$)	$^2\Pi_{\frac{1}{2}}(\frac{1}{2})$	.....	.....	.....	160.5	0.25	(2.0)
PbO	208	16	14.8526391	$^1\Sigma^+(0^+)$	0.3073056	0.0019148	1.9218	721.8	3.70	3.83
PbS	208	32	27.711940$_6$	0^+	0.1163195	0.0004365	2.2868	429.40	1.30	3.4$_3$
PbSe	208	80	57.732418	0^+	0.05059952	0.00012993	2.4022	277.6*	0.51*	2.9$_4$
PbTe	(208)	(130)	(79.96121)	0^+	.....	.....	.....	211.96	0.43	2.63
Pd$_2$	(106)	(108)	(53.44710)	.....	.....	.....	.....	.....	.....	$\leq$1.4$_3$
PdC	(106)	12	(10.778659$_1$)	.....	.....	.....	.....	.....	.....	$\leq$4.7$_7$
PdH	(106)	2	(1.9765122$_2$)	$^2\Sigma^+$	[3.613]	.....	[1.536$_4$]	vibr. numbering unknown		
PdO	(106)	16	(13.896135$_1$)	.....	.....	.....	.....	.....	.....	2.9
PF	31	19	11.7755965	$^2\Sigma^-$	0.5665	0.00456	1.539$_7$	846.75	4.489	(4.9)
PF$^+$	31	19	.....	$^2\Pi_r$	0.6360	0.0048	1.590$_2$	1053.25	5.047	(6.7)
				$A = +324$						
PH	31	1	0.97606596	$^3\Sigma^-$	[8.412]	.....	[1.4329]	.....	.....	(3.0$_3$)
	31	2	1.8911294$_7$	$^3\Sigma^-$	[4.363]	.....	[1.429$_4$]			
PH$^+$	31	1	.....	$^2\Pi_r$	8.505$_1$	0.240$_1$	1.4250	[2299.60]	.....	3.0$_6$
				$A = +296$						
	31	2	.....	$^2\Pi_r$	[4.350$_3$]	.....	[1.4314]	[1666]		
PN	31	14	9.6433616$_8$	$^1\Sigma^+$	0.7862$_1$	0.00557	1.4011	1337.24	6.983	6.3$_6$
PO	31	16	10.5479381	$^2\Pi_r$	0.7337	0.0056	1.4759	1233.3$_3$	6.57	$\leq$6.15
				$A = +224$						
PO$^+$	31	16	.....	$^1\Sigma^+$	.....	.....	.....	1405	(5)	
PrO	141	16	14.3643633	.....	.....	.....	.....	(820)	.....	7.8$_4$
PS	31	32	15.7325010	$^2\Pi_r$	(0.29)	.....	(1.9$_5$)	739.1	2.96	(5.6)
				$A = +321$						
PS$^+$	31	32	.....	$^1\Sigma^+$	.....	.....	.....	844.6	3.3	(6.6)
PtB	(195)	(11)	(10.4208584)	.....	.....	.....	.....	.....	.....	4.9$_1$
PtC	195	12	11.3042295$_7$	$^1\Sigma$	0.5303	0.0032	1.676$_9$	1051.18	4.87	6.30
PtH	(195)	1	(1.00264229)	$^2\Delta_{\frac{3}{2}}$	7.198	0.198	1.5283	[2293.50]	.....	(3.6)
PtO	(195)	16	(14.7821844)	.....	.....	.....	.....	.....	.....	3.8$_2$
RaCl	(226)	(35)	(30.283614)	$^2\Sigma^+$	.....	.....	.....	256.2	0.71	
Rb$_2$	(85)	(85)	(42.45585$_4$)	$^1\Sigma_g^+$	.....	.....	.....	57.2$_8$	0.096	0.49$_0$
RbBr	85	79	40.90270$_1$	$^1\Sigma^+$	0.04752795	0.00018600	2.9447	169	0.46	4.0$_0$
RbCl	85	35	24.768529	$^1\Sigma^+$	0.0876403$_6$	0.0004536$_1$	2.7867	228*	0.92	4.4$_0$
RbF	85	19	15.524831$_8$	$^1\Sigma^+$	0.2106639$_8$	0.0015227$_9$	2.2703	376*	1.9	5.1$_0$

RbH	(85)	1	(0.99600356)	$^1\Sigma^+$	3.020	0.072	2.367	936.9$_4$	14.21	(1.9)
RbI	85	127	50.87275$_0$	$^1\Sigma^+$	0.03283293	0.00010946	3.1769	139	0.34	3.4$_7$
RbC	103	12	10.746788$_4$	$^3\Sigma$	0.6027	0.00396	1.613$_3$	1049.87	4.94	6.01
RbO	103	16	13.843208	.....	.....	.....	.....	.....	.....	4.3
RuC	(102)	12	(10.735774$_4$)	.....	.....	.....	.....	.....	.....	6.5$_5$
RuO	(102)	16	(13.824938)	.....	.....	.....	.....	880.8	13.1	5.3
S_2	32	32	15.9860369	$^3\Sigma_g^-$	0.2954$_7$	0.001570	1.8892	725.64$_7$	2.844	4.38
Sb_2	(121)	(123)	(60.94787)	$^1\Sigma_g^+$	.....	.....	.....	269.85	0.59	3.06
SbBi	(121)	209	(76.59208)	$^1\Sigma^+$	.....	.....	.....	220.0	0.50	(3.0)
SbBr	(121)	(79)	(47.75009$_3$)	.....	.....	.....	.....	(242.1)	(0.56)	(3.2)
SbCl	(121)	35	(27.123853)	.....	.....	.....	.....	(369.0)	(0.92)	(4.6)
SbF	(121)	19	(16.418463)	.....	.....	.....	.....	(614.2)	(2.77)	(4.2)
SbH	(121)	1	(0.99949368)	$^3\Sigma^-$	[5.87]	.....	[1.69$_1$]			
	(121)	2	(1.9810996$_0$)	$^3\Sigma^-$	[2.94]	.....	[1.70$_1$]			
SbN	(121)	14	(12.549581$_6$)	$^1\Sigma^+$	.....	.....	.....	942.0	5.6	(4.8)
SbO	(121)	16	(14.126107$_1$)	$^3\Pi_1$	.....	.....	.....	817	5.$_0$	(4.1)
				A = +2272						
SbSe	(121)	(80)	(48.11370$_1$)	($^3\Pi$)	.....	.....	.....	326.1	1.04	(3.1)
SbTe	(121)	(130)	(62.62182)	($^3\Pi$)	.....	.....	.....	(284)	(0.2)	2.78
Sc_2	45	45	22.477959$_8$	.....	.....	.....	.....	.....	.....	1.6$_5$
ScF	45	19	13.3546989	$^1\Sigma^+$	0.3950	0.00266	1.787$_6$	735.6	3.8	6.0$_6$
ScO	45	16	11.7974776	$^2\Sigma^+$	[0.51340]	.....	[1.6683]	971.55	3.95	6.9$_6$
ScS	45	(32)	(18.684147$_4$)	($^2\Sigma^-$)	.....	.....	.....	.....	.....	4.9$_2$
Se_2	80	80	39.458256	O_g^+	0.08992	0.000288	2.1660	385.3028	0.96363	3.410
SeF	(80)	19	(15.349416$_3$)	$^2\Pi_i$	[0.363]	.....	[1.73$_1$]			
				A = −560						
SeH	(80)	1	(0.99527385)	$^2\Pi_r$	[7.98]	.....	[1.457]	(2400)	.....	3.2
				A_0 = −1600						
SeO	80	16	13.3274820	$^3\Sigma^-$	0.4704	0.0032$_6$	1.639$_8$	915.43	4.52	4.3$_4$
					(constants for F_2 levels)					
SeS	(80)	(32)	(22.836079$_3$)	.....	.....	.....	.....	.....	.....	(3.9$_0$)
SH	32	1	0.97702732	$^2\Pi_i$	[9.461$_1$]	(0.30$_0$)	[1.3504]	(2702)	(60)	3.53
				A_0 = −377						
	32	2	1.8947416$_7$	$^2\Pi_r$	[4.900$_3$]	(0.11$_1$)	[1.3474]	(1940)	(31)	3.57$_5$
SH^+	32	1	.....	$^3\Sigma^-$	[9.134$_0$]	.....	[1.3714]			
Si_2	28	28	13.988463$_6$	$^3\Sigma_g^-$	0.2390	0.0013	2.245	510.98	2.02	3.1$_0$
SiBr	(28)	(79)	(20.654728)	$^2\Pi_i$	.....	.....	.....	425.4	1.5	(3.7)
				A = +418						
$SiBr^+$	(28)	(79)	.....	$^1\Sigma^+$	.....	.....	.....	535.8	1.6	(5.5)
SiC	(28)	12	(8.3979222$_4$)	.....	.....	.....	.....	.....	.....	4.6$_4$
SiCl	28	35	15.542282$_1$	$^2\Pi_i$	0.25619	0.00163	2.0576	535.89	2.29	(4.5)
				A = +207						
SiF	28	19	11.3148106	$^2\Pi_i$	0.5813$_3$	0.00490	1.6008	857.2$_0$	4.74	5.5$_7$
				A = +162						

TABLE 7g-1. CONSTANTS OF DIATOMIC MOLECULES (*Continued*)

(1)	m_1 (2)	m_2 (2)	μ (3)	Ground state (4)	B_e (5)	α_e (6)	r_e (7)	ω_e (8)	ωx_e (9)	$D_0°$ (10)
SiH	(28)	1	(0.97278225)	$^2\Pi_r$ $A = +143$	7.4079	0.2149	1.5203	2045	36	3.06
	(28)	2	(1.8788414$_9$)	$^2\Pi_r$	3.8849	0.0801	1.5197	1471	19	3.09
SiI	28	127	22.923324$_4$	$^2\Pi_{\frac{1}{2}}$ $A = +(757)$	.....	.....	.....	360.5	1.0$_1$	
SiN	28	14	9.3321338	$^2\Sigma^+$	0.7310	0.00567	1.5720	1151.68$_0$	6.560$_0$	(6.2)
SiO	28	16	10.1767074	$^1\Sigma^+$	0.7267514	0.005038$_5$	1.5097	1241.4$_4$	5.92	8.26
SiO^+	...	...	.....	Spectrum previously attributed to SiO^+ now known to be due to SiN.						
SiS	28	32	14.920688$_7$	$^1\Sigma^+$	0.3035290	0.0014736	1.9293	749.6$_9$	2.58	6.37
SiSe	28	80	20.722468$_8$	$^1\Sigma^+$	0.1920116	0.0007767	2.0583	580.0*	1.78*	5.4$_5$
SiTe	28	(130)	(23.019425)	$^1\Sigma^+$	.....	.....	.....	481.2	1.30	4.60
SmO	(152)	16	(14.471297$_4$)	.....	.....	.....	.....	.....	.....	6.1$_6$
Sn_2	(120)	(118)	(59.44677)	.....	.....	.....	.....	.....	.....	1.9$_9$
SnBr	(120)	(79)	(47.59307$_4$)	$^2\Pi_r$ $A = +2467$	.....	.....	.....	247.7	0.62	(3.0)
SnCl	(120)	35	(27.073116)	$^2\Pi_r$ $A = +2361$	.....	.....	.....	354.0	1.1	$\leqslant$4.25
SnF	118	19	16.361890	$^2\Pi_r$ $A = -2317$	0.2733	0.0011	1.942	586.$_1$*	2.76*	4.7$_9$
SnH	(120)	1	(0.99942466)	$^2\Pi_r$ $A = -2178$	5.383	0.137	1.770$_1$	1715	30	2.6$_0$
	(120)	2	(1.9808284$_6$)	$^2\Pi_r$	2.7195	0.049	1.7690	1218	15	
SnI	(120)	127	(61.65195)	$^2\Pi$	.....	.....	.....	199.0	0.5$_5$	(2.2)
SnO	120	16	14.112333$_1$	$^1\Sigma^+$	0.3557190	0.002142$_9$	1.8325	822.1	3.73	5.49
SnS	120	32	25.241415	$^1\Sigma^+$	0.136861$_9$	0.000506$_3$	2.2090	487.26	1.358	4.7$_7$
SnSe	120	80	47.95428$_4$	$^1\Sigma^+$	0.0649977$_6$	0.0001704$_6$	2.3256	331.2*	0.736*	4.09
SnTe	(120)	(130)	(62.35204)	$^1\Sigma$	.....	.....	.....	259.5	0.50	3.65
SO	32	16	10.6613029$_8$	$^3\Sigma^-$	0.720817	0.00573$_6$	1.4811	1148.19	6.116	5.35$_5$
SrBr	(88)	79	(41.58494$_7$)	$^2\Sigma^+$	.....	.....	.....	216.5	0.51	(3.9)
SrCl	(88)	35	(25.017065)	$^2\Sigma^+$	.....	.....	.....	302.3	0.95	4.2$_5$
SrF	(88)	19	(15.622111)	$^2\Sigma^+$	0.25045	0.00148	2.0757	500.1	2.21	5.5$_8$
SrH	(88)	1	(0.99640162)	$^2\Sigma^+$	3.6751	0.0814	2.1456	1206.2	17.0	$\leqslant$1.68
	(88)	2	(1.9689885$_3$)	$^2\Sigma^+$	1.8609	0.0292	2.1449	.....	.....	$\leqslant$1.70
SrI	(88)	127	(51.93244)	$(^2\Sigma^+)$	.....	.....	.....	173.9	0.42	(3.5)
SrO	88	16	13.532585$_7$	$^1\Sigma^+$	0.33798	0.00219	1.9198	653.2*	3.92*	4.4$_2$
SrS	(88)	(32)	(23.444936)	$(^1\Sigma)$	.....	.....	.....	.....	.....	3.4$_7$

SrSe	(88)	(80)	(41.86045$_1$)	($^1\Sigma$)						2.8_9
TaO	181	16	14.6958719	$^2\Delta$] A = +1753	0.40288	0.00182	1.6874	1028.69	3.51	8.4
TbO	159	16	14.532317$_7$							7.5_2
Te$_2$	(130)	(128)	(64.44897)	(O_g^+)			2.59]	251	0.55	2.65
TeH	(130)	1	(1.00006663)	$^2\Pi_i$ A_0 = −2250	[5.56]		1.741]			
TeO	128	16	14.217027$_7$	O^+	0.3560	0.002375	1.825$_0$	797.69	4.00	3.9_0
TeS	(130)	(32)	(25.657389)	(O^+)				470.0	1.4	(3.4$_7$)
TeSe	(130)	(80)	(49.47827$_1$)	(O^+)				318.0	1.0	2.8_9
ThN	232	14	13.2061101$_9$							5.9
ThO	232	16	14.9634507	($^1\Sigma^+$)	0.332644	0.001302	1.8403	895.77	2.39	8.5
					(constants for lowest $^1\Sigma$ state)					
ThP	232	31	27.326119$_5$							4.0
Ti$_2$	(48)	(48)	(23.973973$_9$)							1.3_0
TiC	(48)	12	(9.5979161$_0$)							≤ 5.5
TiCl	(48)	(35)	(20.221291$_3$)	($^4\Sigma$)				379.7	3.41	
TiO	(48)	16	(11.9938851)	$^3\Delta_r$ A = +(50)	0.5355	0.0030	1.6200	1008.26	4.13	6.9_8
TiS	(48)	(32)	(19.181618$_0$)							4.7
Ti$_2$	(205)	(205)	(102.48723$_1$)							(0.6)
TlBr	205	81	58.01440$_2$	$^1\Sigma^+$	0.0423896	0.0001278	2.6182	192.10	0.39	3.42_1
TlCl	205	35	29.872564$_2$	$^1\Sigma^+$	0.09139701$_0$	0.00039793$_2$	2.4848	287.47	1.24	3.82_0
TlF	205	19	17.3868729	$^1\Sigma^+$	0.2231501$_5$	0.0015033$_7$	2.0844	477.3	2.3	4.57_8
TlH	(205)	1	(1.00289416)	$^1\Sigma^+$	4.806	0.154	1.870$_2$	1390.7	22.7	1.97_8
	(205)	2	(1.9945039$_7$)	$^1\Sigma^+$	2.419	0.057	1.869	987.7	12.04	2.00_0
Tl	205	127	78.37846$_2$	$^1\Sigma^+$	0.0271674$_6$	0.0000663$_5$	2.8137	(150)		2.77_0
TmO	169	16	14.611481$_4$							6.0
UN	238	14	13.2251212							5.4_4
UO	238	16	14.9878626							7.88
US	238	(32)	(28.186418$_0$)							5.8_0
VO	51	16	12.1729619	$^4\Sigma^-$	0.5480	0.0034	1.589$_7$	1011.56	4.97	6.4_6
WO	(184)	16	(14.7153823)	($^3\Sigma^-$)				[(1055)]		6.7
Xe$_2$	(132)	(129)	(65.193613)	$^1\Sigma_g^+$						(0.019)
Xe$_2^+$	(132)	(129)								≥ 0.967
Y$_2$	89	89	44.452715							1.6_2
YbCl	(174)	(35)	(29.115457)	($^2\Sigma$)	(constants for lowest observed state)			293.6	1.23	(2.1)
YbH	(174)	1	(1.00201939)	$^2\Sigma^+$	3.995	0.0986	2.052$_1$	1249.54	21.055	1.6_2
	(174)	2	(1.9910471$_4$)	$^2\Sigma^+$	2.0121	0.0352	2.0513	886.38	10.475	1.6_4
YbO	(174)	16	(14.647934$_3$)							$\leq (3.8)$
YCl	89	35	25.097389	$^1\Sigma^+$	0.1162	0.0003	2.404	380.7	1.3	(3.4)
					(constants for lowest observed $^1\Sigma$ state)					

TABLE 7g-1. CONSTANTS OF DIATOMIC MOLECULES (*Continued*)

(1)	m_1 (2)	m_2 (2)	μ (3)	Ground state (4)	B_e (5)	α_e (6)	r_e (7)	ω_e (8)	$\omega_e x_e$ (9)	$D_0°$ (10)
YF	89	19	15.653395	$^1\Sigma^+$	0.29041	0.00163	1.9257	636.3	2.50	6.2
YLa	89	139	54.20931	.....	.....	.....	.....	.....	.....	2.0_5
YO	89	16	13.556054$_5$	$^1\Sigma^+$	[0.3881]	(0.0016)	[1.790$_0$]	852.5	2.45	7.3_9
YS	89	(32)	(23.515467)	($^1\Sigma^+$)	.....	.....	.....	.....	.....	5.4_5
ZnCl	(64)	35	(22.604390$_2$)	$^1\Sigma$	.....	.....	.....	390.5	1.55	2.1
ZnF	(64)	19	(14.6459382)	$^1\Sigma$	.....	.....	.....	(630)	(3.5)	
ZnH	(64)	1	(0.99218372)	$^1\Sigma^+$	6.6704	0.2500	1.5949	1607.6	55.14	0.84_5
	(64)	2	(1.9525855)	$^1\Sigma^+$	[3.3497]	.....	[1.6054]	(1150.0)	(28.02)	0.87_9
ZnH^+	(64)	1	.....	$^1\Sigma^+$	7.403	0.236	1.5149	1916	39	(2.5)
	(64)	2	.....	$^1\Sigma^+$	3.767	0.107	1.513_9	1364.8	19.8	
ZnI	64	127	42.512907	($^1\Sigma$)	.....	.....	.....	223.4	0.75	1.4
ZnO	(64)	16	(12.7939101)	.....	.....	.....	.....	.....	.....	2.8
ZnS	(64)	(32)	(21.313048$_7$)	.....	.....	.....	.....	.....	.....	2.0_8
ZnSe	(64)	(80)	(35.517195)	.....	.....	.....	.....	.....	.....	1.3_7
ZrN	(90)	14	(12.115950$_8$)	.....	.....	.....	.....	.....	.....	5.8_1
ZrO	90	16	13.579058$_9$	$^1\Sigma^+$	0.4241	0.0023	1.711	978.0_7	5.04	7.8_5