CHAPTER 5

Thermochemical Data

Tables I and II

The format for the presentation of the tables of data for the thermodynamic properties of inorganic compounds (Table I) and for metallic solutions (Table II) has been changed in this edition to facilitate their use. Table I presents all of the data, with some additions, which were displayed in Tables A to C2 in the 5th edition. The data for a given element or compound are now assembled together, and can be applied with simple computer programs to calculate the vapour pressures previously given in Table D and the Gibbs energy change in Table E. These latter tables have therefore been omitted from this edition.

The Table II has not been altered from the 5th edition content for metallic alloys except for the conversion to S.I. units.

We wish to express our gratitude to Dr Rajiv Doshi of the University of Notre Dame who has carried out the programming, conversion and reprinting of data in Table I and II in the form in which they are now presented.

TABLE I

Substance	$S_{298} \pm \delta S$ (J/deg mol)	$-\Delta H_{298} \pm \delta H$ (kJ/mol)	Phase	T K	$C_p = A + BT + C/T^2 + DT^2$ A	$B \times 10^3$ (J/deg mol)	$C \times 10^{-5}$ (J/deg mol)	$D \times 10^6$ (J/deg mol)	H_t (kJ/mol)
Ag	42.6	0.0	fcc	298	21.30	8.54	1.51	—	—
			liq	1235	33.47	—	—	—	11.3
Ag(g)	172.9	−284.9	gas	298	20.79	—	—	—	—
AgBr	107.1 ± 0.4	100.7 ± 0.8	cubic	298	33.18	64.43	—	—	—
			liq	700	62.34	—	—	—	13.0
AgBr(g)	257.0	−96.4	gas	298	37.49	—	−0.79	—	—
$AgBrO_3$	154.0	26.4	tetrag	298	66.94	125.52	—	—	—
AgCl	96.2	127.0	cubic	298	62.26	4.18	−11.30	—	—
			liq	728	66.94	—	—	—	13.2
AgCl(g)	246.1 ± 0.2	−92.6	gas	298	37.24	—	−1.42	—	—
AgF	83.7 ± 5.0	205.9 ± 3.8	cubic	298	53.05	16.15	−8.79	—	—
AgF(g)	235.8	− 7.1	gas	298	35.56	—	−1.42	—	—
AgI	115.5 ± 1.3	61.9 ± 0.4	α	298	35.77	71.13	—	—	—
			β	420	56.48	—	—	—	6.3
			liq	830	58.58	—	—	—	9.4
AgI(g)	264.2	−159.3	gas	298	37.40	—	−0.54	—	—
Ag_2O	120.9 ± 0.4	31.1 ± 0.6	cubic	298	59.33	40.79	−4.60	—	—
Ag_2CO_3	167.4 ± 4.2	505.8 ± 2.5	cryst	298	79.37	108.16	—	—	—
Ag_2CrO_4	218.0 ± 1.3	721.3	orth	298	132.21	66.94	−8.91	—	—
$AgNO_3$	140.9 ± 0.4	124.5 ± 1.0	orth	298	36.65	189.12	—	—	—
			hex	433	106.69	—	—	—	2.5
			liq	483	128.03	—	—	—	11.7
Ag_2S	143.5 ± 1.3	31.8 ± 0.8	monocl	298	64.60	39.96	—	—	—
			cubic	449	81.34	2.93	—	—	3.9
			cubic	859	82.72	—	—	—	0.5
			liq	1103	93.09	—	—	—	7.9
Ag_2SO_4	199.8 ± 0.4	717.1 ± 1.3	orth	298	96.65	116.73	—	—	—
			hex	700	96.65	116.73	—	—	15.7
			liq	933	205.02	—	—	—	18.0
Ag_2Se	150.7 ± 0.8	43.5 ± 0.8	orth	298	65.14	54.89	—	—	—
			cubic	406	80.50	9.50	—	—	7.1
Ag_2Te	153.6 ± 1.7	36.0 ± 0.6	orth	298	49.20	109.62	2.76	—	—
			cubic	421	78.87	3.85	10.42	—	6.6
			cubic	620	84.01	—	—	—	—

Ag_2WO_4	205.0	925.5 ± 22.6	cryst	298	132.47	69.20	—	—	—
Al	28.3	0.0	fcc	298	31.38	−16.40	−3.60	20.75	—
			liq	934	31.76	—	—	—	10.7
Al(g)	164.4	−330.0	gas	298	20.75	—	0.54	—	—
AlAs	60.2 ± 4.2	116.3 ± 6.3	cubic	298	43.93	6.28	—	—	—
AlBr(g)	239.5 ± 0.2	−15.9 ± 14.6	gas	298	37.26	0.59	−1.63	—	—
$AlBr_3$	180.2 ± 0.4	511.3	monocl	298	49.96	169.58	—	—	—
			liq	371	124.98	—	—	—	11.3
$AlBr_3(g)$	349.1 ± 2.9	410.9	gas	298	82.55	0.31	−6.44	—	—
$Al_2Br_6(g)$	547.3	937.2	gas	298	182.00	0.46	−13.77	—	—
Al_4C_3	88.9 ± 0.8	209.2 ± 6.3	hex	298	154.68	28.74	−41.84	—	—
AlCl(g)	227.9 ± 0.2	51.5 ± 9.2	gas	298	36.59	1.26	−2.06	—	—
			gas	800	37.38	0.46	−3.05	—	—
$AlCl_2(g)$	287.9	288.7	gas	298	57.78	0.22	−4.95	—	—
$AlCl_3$	109.3 ± 0.8	705.6 ± 1.7	monocl	298	64.94	87.86	—	—	—
$AlCl_3(g)$	314.3 ± 1.3	584.5 ± 2.5	gas	298	81.96	0.63	−9.92	—	—
$Al_2Cl_6(g)$	475.5	1295.4 ± 3.3	gas	298	180.92	1.05	−20.42	—	—
AlF(g)	215.1 ± 0.2	265.7 ± 3.3	gas	298	33.56	4.08	−2.53	—	—
			gas	800	37.28	0.44	−7.66	—	—
$AlF_2(g)$	263.2	732.2	gas	298	51.76	6.13	−6.92	—	—
			gas	800	57.93	0.10	−16.16	—	—
AlF_3	66.5 ± 0.4	1510.4 ± 1.3	hex	298	90.96	17.66	−18.79	—	—
			hex	500	3.79	126.82	62.68	—	—
			β	728	92.68	9.06	−8.94	—	0.6
$AlF_3(g)$	277.8 ± 1.3	1207.9 ± 3.3	gas	298	79.16	2.26	−15.44	—	—
$Al_2F_6(g)$	387.0	2633.6	gas	298	162.90	22.09	−31.67	−6.49	—
AlH_3	30.0 ± 0.4	11.4 ± 0.8	hex	298	45.19	—	—	—	—
AlI_3	189.5 ± 8.4	309.2 ± 5.9	hex	298	70.63	94.81	—	—	—
			liq	462	121.34	—	—	—	15.9
$Al_2I_6(g)$	582.8	514.2	gas	298	182.42	0.26	−10.21	—	—
AlN	20.2 ± 0.2	318.4 ± 2.1	hex	298	32.26	22.68	−7.91	—	—
			hex	600	50.21	1.17	−26.07	—	—
			hex	1000	50.12	0.39	−17.41	—	—
Al_2O_3	50.9 ± 0.2	1675.7 ± 1.3	hex	298	117.49	10.38	−37.11	—	—
			liq	2325	184.10	—	—	—	107.0
$Al_2O(g)$	256.9 ± 6.7	130.5 ± 16.7	gas	298	50.84	3.97	−8.70	−2.38	—
$Al_4B_2O_9$	155.6 ± 5.0	4690.7 ± 6.7	orth	298	270.29	108.57	−71.13	—	—
$9Al_2O_3.2B_2O_3$	654.0	17727.6 ± 30.1	orth	298	980.31	613.37	−288.28	−176.56	—
AlOCl	54.4 ± 4.2	793.3 ± 1.3	orth	298	55.35	34.35	−7.78	—	—
AlOCl(g)	248.8 ± 2.9	353.1 ± 10.5	gas	298	58.74	3.47	−8.70	−0.84	—
AlOOH	35.2 ± 0.4	1002.1 ± 4.2	diasp	298	52.76	—	—	—	—

TABLE I—*continued*

Substance	$S_{298} \pm \delta S$ (J/deg mol)	$-\Delta H_{298} \pm \delta H$ (kJ/mol)	Phase	T K	$C_p = A + BT + C/T^2 + DT^2$ A	$B \times 10^3$ (J/deg mol)	$C \times 10^{-5}$ (J/deg mol)	$D \times 10^6$ (J/deg mol)	H_t (kJ/mol)
AlOOH(b)	48.4	985.3	boch	298	60.42	17.57	—	—	—
$Al_2O_3.3H_2O$	140.2± 1.3	2586.5± 4.6	monocl	298	72.38	381.58	—	—	—
$AlCl_3.6H_2O$	318.0± 2.5	2691.6± 1.7	hex	298	297.06	—	—	—	—
AlOF(g)	237.2±16.7	581.6±29.3	gas	298	58.66	2.05	−11.13	—	—
AlP	47.3± 1.3	164.4± 2.5	cubic	298	40.17	6.28	—	—	—
$AlPO_4$	90.8± 0.4	1733.0± 2.1	hex	298	51.46	139.33	—	—	—
				853	167.36	—	—	—	1.3
				978	163.18	—	—	—	1.1
AlS(g)	230.5± 0.4	−238.9	gas	298	36.84	0.69	−3.26	—	—
Al_2S_3	123.4	723.4	hex	298	102.17	36.07	—	—	—
			liq	1370	156.90	—	—	—	56.5
$Al_2(SO_4)_3$	239.2± 1.3	3441.3± 2.1	hex	298	366.31	62.59	−111.63	—	—
AlSb	64.9± 0.8	50.2± 1.0	cubic	298	43.51	9.62	—	—	—
			liq	1333	58.99	—	—	—	82.0
AlSe(g)	243.1	−221.3±12.6	gas	298	107.74	34.31	—	—	—
Al_2Se_3	154.8±25.1	566.9±25.1	hex	298	107.74	34.31	—	—	—
$Al_6Si_2O_{13}$	274.9± 0.4	6820.8± 8.4	mullit	298	233.59	633.88	−55.86	−385.77	—
				600	503.46	35.10	−230.12	−2.51	—
Al_2SiO_5	83.8± 0.4	2589.5± 2.1	kyanit	298	177.99	23.89	−57.95	—	—
Al_2SiO_5(a)	93.2± 0.2	2587.0± 2.1	andal	298	173.64	26.11	−52.63	−0.63	—
Al_2SiO_5(s)	96.1± 0.4	2584.0± 2.1	sillim	298	169.74	28.74	−50.84	—	—
Al_2Te_3	188.3±18.8	318.8± 9.2	hex	298	110.88	34.73	—	—	—
			liq	1163	176.56	—	—	—	50.0
Al_2TiO_5	109.6± 2.1	2607.1±16.7	rhomb	298	182.55	22.18	−46.90	—	—
As	35.7± 0.4	0.0	rhomb	298	23.03	5.74	—	—	—
As_2(g)	239.3± 1.3	−190.8± 6.3	gas	298	37.20	0.15	−2.02	—	—
As_4(g)	328.4± 5.0	−156.1± 2.5	gas	298	82.94	0.13	−5.13	—	—
$AsBr_3$(g)	363.8± 0.4	132.1± 4.2	gas	298	83.26	—	−4.23	—	—
$AsCl_3$	212.5	315.5	liq	298	133.89	—	—	—	—
$AsCl_3$(g)	326.2± 0.8	271.1	gas	298	82.09	1.00	−5.94	—	—
AsF_3	181.2± 0.4	956.9± 3.3	liq	298	126.78	—	—	—	—
AsF_3(g)	288.9± 0.4	921.3± 3.3	gas	298	75.98	6.90	−11.21	—	—
AsH_3(g)	223.0± 0.6	−66.4± 1.3	gas	298	42.01	22.80	−9.08	—	—
AsI_3	213.0	64.9	hex	298	71.21	116.32	—	—	—
			liq	414	133.89	—	—	—	21.8

As_2O_3	122.6	665.8 ± 2.1	monocl	298	59.83	171.96	—	—	—
			liq	587	152.72	—	—	—	22.6
As_2O_5	105.4 ± 2.5	920.1 ± 5.0	cryst	298	42.47	246.86	—	—	—
As_2S_3	163.6 ± 5.0	167.4 ± 16.7	monocl	298	105.65	36.44	—	—	—
			liq	585	177.86	16.86	—	—	28.7
AsS	63.4 ± 1.7	71.1 ± 10.5	monocl	298	41.46	18.66	—	—	—
			liq	580	73.22	—	—	—	6.1
AsS(g)	232.2 ± 4.2	−202.9	gas	298	34.94	1.63	—	—	—
As_2Se_3	194.6 ± 5.0	102.5 ± 16.7	rhomb	298	95.81	85.77	—	—	—
			liq	650	195.39	—	—	—	40.8
As_2Te_3	226.4 ± 4.2	37.7 ± 8.4	monocl	298	135.19	44.35	−18.58	—	—
			liq	648	167.36	—	—	—	46.9
Au	47.5	0.0	fcc	298	31.46	−13.47	−2.89	10.96	—
			liq	1338	50.33	−12.69	—	—	12.6
			liq	1500	30.96	—	—	—	—
Au(g)	180.4	−368.2	gas	298	20.79	—	—	—	—
			gas	1000	22.26	−3.01	—	1.51	—
AuBr	98.3	14.2 ± 2.9	cryst	298	49.37	5.44	−0.84	—	—
AuCl	85.8 ± 4.2	36.4 ± 2.1	rhomb	298	48.53	5.44	−1.26	—	—
$AuCl_3$	164.4 ± 6.3	118.4 ± 4.2	monocl	298	97.91	5.44	−4.18	—	—
AuH(g)	211.1 ± 0.2	−273.4	gas	298	29.29	—	—	—	—
AuI	111.1	− 1.3 ± 2.1	cryst	298	50.21	5.44	—	—	—
Au_2O_3	130.3	3.4	cubic	298	107.53	21.76	—	—	—
Au_2P_3	150.6 ± 12.6	97.5 ± 12.6	monocl	298	108.37	37.66	—	—	—
$AuPb_2$	175.3	6.3 ± 1.7	tetrag	298	61.92	74.48	—	—	—
			liq	527	96.65	—	—	—	24.0
AuS(g)	267.6 ± 4.2	−230.5 ± 25.1	gas	298	37.32	0.05	−1.62	—	—
$AuSb_2$	119.2 ± 1.3	19.5 ± 1.3	tetrag	298	71.63	19.41	—	—	—
AuSe	80.8 ± 6.3	7.9 ± 6.3	monocl	298	41.84	27.91	—	—	—
AuSn	98.1 ± 2.9	30.5 ± 1.7	hex	298	46.57	15.90	—	—	—
			liq	692	60.67	—	—	—	24.7
$AuTe_2$	141.7 ± 0.4	18.6 ± 4.6	monocl	298	63.60	37.40	1.72	—	—
B	5.9	0.0	hex	298	17.91	9.64	−8.58	−1.80	—
			liq	2350	30.54	—	—	—	50.2
B(a)	6.5	− 4.2 ± 1.3	amorph	298	16.05	10.00	−6.28	—	—
B(g)	153.3 ± 0.2	−560.7 ± 12.6	gas	298	20.79	—	—	—	—
BBr_3	228.7	238.9 ± 1.3	liq	298	128.03	—	—	—	—
$BBr_3(g)$	324.5 ± 1.7	204.4 ± 1.3	gas	298	80.37	1.44	−11.92	—	—
B_4C	27.1 ± 0.3	71.5 ± 11.7	hex	298	96.52	21.92	−44.98	—	—
			liq	2734	135.98	—	—	—	104.6
$BCl_3(g)$	290.1 ± 0.8	403.3 ± 0.8	gas	298	78.41	2.41	−15.48	—	—

TABLE I—*continued*

Substance	$S_{298} \pm \delta S$ (J/deg mol)	$-\Delta H_{298} \pm \delta H$ (kJ/mol)	Phase	T K	$C_p = A + BT + C/T^2 + DT^2$				H_t (kJ/mol)
					A	$B \times 10^3$ (J/deg mol)	$C \times 10^{-5}$ (J/deg mol)	$D \times 10^6$ (J/deg mol)	
BF_3(g)	254.3 ± 0.4	1136.0 ± 1.0	gas	298	56.82	27.49	−12.76	−7.74	—
BH(g)	171.8	−442.7	gas	298	30.46	2.97	−2.47	—	—
B_2H_6(g)	231.8 ± 0.8	−38.5 ± 3.8	gas	298	11.30	180.08	−3.46	−55.31	—
BI_3(g)	348.6	−71.1	gas	298	82.01	−0.42	−10.46	—	—
BN	14.8 ± 0.2	252.3 ± 1.3	hex	298	41.21	9.41	−21.76	—	—
B_2O_3	54.0 ± 0.4	1273.5 ± 1.7	hex	298	57.03	73.01	−14.06	—	—
			liq	723	129.70	—	—	—	24.1
B_2O_3(a)	78.4 ± 0.8	1253.5 ± 2.5	amorph	298	23.72	131.29	—	—	—
			amorph	500	845.59	−741.82	−963.99	—	—
B_2O_3(g)	283.7 ± 4.2	836.4 ± 4.2	gas	298	78.78	22.18	−16.78	−4.44	—
BOCl(g)	237.2 ± 1.7	315.9 ± 8.4	gas	298	47.66	14.23	−5.90	−3.82	—
$B(OH)_2$(g)	243.1	477.0	gas	298	64.18	31.51	−19.58	−6.07	—
$B(OH)_3$	88.7 ± 0.6	1094.1 ± 1.3	tricl	298	81.34	—	—	—	—
BP	26.8 ± 0.4	115.5 ± 5.9	cubic	298	21.97	28.03	—	—	—
B_2S_3	92.0 ± 20.9	252.3 ± 8.4	monocl	298	98.03	64.02	—	—	—
			liq	836	151.67	—	—	—	48.1
Ba	62.4	0.0	bcc	298	−473.21	1586.99	128.16	—	−1306.04
			bcc	648	0.67	−975.71	−710.02	−428.44	—
			liq	1003	22.84	7.82	126.78	—	7.7
			liq	1300	40.58	—	—	—	—
Ba(g)	170.1	−179.1	gas	298	20.79	—	—	—	—
			gas	900	48.66	−36.32	−49.04	13.43	—
$BaBr_2$	148.5 ± 4.2	757.7 ± 1.7	orth	298	70.54	21.67	—	—	—
			liq	1130	104.85	—	—	—	32.0
$BaBr_2$(g)	341.8 ± 8.4	424.7 ± 12.6	gas	298	58.45	0.65	—	—	—
BaC_2	88.7 ± 8.4	74.1 ± 12.6	tetrag	298	73.64	3.77	−9.67	—	—
$BaCl_2$	123.7 ± 0.2	858.6 ± 12.6	cubic	298	69.45	19.16	—	—	—
			β	1198	123.85	—	—	—	16.9
			liq	1245	108.78	—	—	—	16.0
$BaCl_2$(g)	325.6 ± 5.0	498.7 ± 16.7	gas	298	58.20	—	−1.80	—	—
BaF_2	96.4 ± 0.4	1208.8 ± 4.2	cryst	298	70.21	18.37	−2.83	—	—
				1250	70.21	18.37	−2.83	—	17.1
			liq	1641	99.83	—	—	—	23.3
BaF_2(g)	301.2 ± 2.1	803.7 ± 6.3	gas	298	57.99	0.15	−3.77	—	—

BaH_2	64.4± 6.3	178.7± 4.2	cryst	298	37.24	17.15	—	—	—
BaI_2	165.1± 0.4	605.4± 3.3	cubic	298	71.55	20.00	—	—	—
			liq	984	112.97	—	—	—	26.5
$BaI_2(g)$	348.1± 8.4	302.9±16.7	gas	298	57.82	—	—	—	—
Ba_3N_2	152.3± 8.4	341.0±31.4	ps.hex	298	87.86	98.32	—	—	—
BaO	72.1± 0.4	548.1± 2.1	cubic	298	50.29	7.20	−4.60	—	—
			liq	2286	66.94	—	—	—	58.6
BaO(g)	235.4± 0.8	123.4± 8.4	gas	298	39.54	−3.85	−5.27	1.61	—
BaO_2	93.1± 9.6	634.3±11.7	cubic	298	62.34	28.03	—	—	—
$Ba_3Al_2O_6$	301.2	3508.3±12.6	cryst	298	266.52	30.84	−53.43	—	—
$BaAl_2O_4$	148.5± 9.2	2324.2± 7.9	hex	298	143.30	73.89	−45.90	—	—
			β	600	138.20	31.63	—	—	—
$BaCO_3$	107.5± 1.3	1217.5±12.6	orth	298	86.90	48.95	−11.97	—	—
			tetrag	1079	154.81	—	—	—	18.8
			cubic	1241	163.18	—	—	—	2.9
$BaHfO_3$	121.3±12.6	1789.9±12.6	monocl	298	123.85	13.39	−17.36	—	—
$BaMoO_4$	146.9± 4.6	1516.3± 6.7	tetrag	298	135.27	28.45	−25.10	—	—
$Ba(NO_3)_2$	213.8± 1.0	992.4± 2.1	nit.ba	298	125.73	149.37	−16.74	—	—
BaS	78.2± 1.3	463.6± 3.3	cubic	298	51.17	7.87	−3.68	—	—
$BaSO_4$	132.2± 1.3	1481.1±12.6	baryte	298	141.42	—	−35.27	—	—
$BaSiO_3$	104.6± 8.4	1618.0± 7.1	cryst	298	122.01	7.11	−31.21	—	—
			1300	62.76	51.04	—	—	—	
Ba_2SiO_4	177.8± 8.4	2272.3± 3.8	orth	298	175.35	11.46	−39.71	—	—
Ba_2Sn	126.8±10.5	376.6±33.5	cryst	298	60.67	41.84	—	—	—
Ba_2TiO_4	196.6	2233.4±12.6	monocl	298	179.91	6.69	−29.12	—	—
$BaTiO_3$	107.9	1647.7±11.7	cubic	298	121.46	8.54	−19.16	—	—
$BaUO_4$	178.1± 0.4	1988.2± 2.1		298	140.58	20.92	—	—	—
BaV_2O_6	193.7±10.0	2282.0± 6.7	cryst	298	181.59	81.17	−29.29	—	—
$BaZrO_3$	124.7	1769.0± 5.9	cubic	298	127.90	5.94	−21.21	—	—
Be	9.5	0.0	hcp	298	21.21	5.69	−5.86	0.96	—
			bcc	1543	32.22	—	—	—	2.5
			liq	1562	29.46	—	—	—	12.6
Be(g)	136.1	−324.0	gas	298	20.92	—	—	—	—
			gas	1900	18.95	0.59	27.24	—	—
$BeBr_2$	100.4± 4.6	355.6±12.6	ortho	298	60.21	29.50	—	—	—
			liq	781	112.97	—	—	—	10.0
Be_2C	16.3± 3.8	117.0± 1.0		298	38.37	45.02	−8.41	−9.58	—
$BeCl_2$	82.7± 0.4	490.8± 3.3	orth	298	76.61	12.34	−13.77	—	—
			liq	688	121.42	—	—	—	8.7
$BeCl_2(b)$	75.8± 0.2	496.2± 3.3	orth.β	298	65.65	20.88	−8.41	—	—
$BeCl_2(g)$	251.0± 4.2	360.2±10.5	gas	298	58.12	3.47	−0.75	−6.99	—

TABLE I—*continued*

Substance	$S_{298} \pm \delta S$ (J/deg mol)	$-\Delta H_{298} \pm \delta H$ (kJ/mol)	Phase	T K	$C_p = A + BT + C/T^2 + DT^2$				H_t (kJ/mol)
					A	$B \times 10^3$ (J/deg mol)	$C \times 10^{-5}$ (J/deg mol)	$D \times 10^6$ (J/deg mol)	
$Be_2Cl_4(g)$	387.0 ± 8.4	821.3	gas	298	131.38	0.63	−14.98	—	—
BeF(g)	205.6	174.9 ± 10.5	gas	298	30.04	7.91	−2.18	−2.13	—
BeF_2	53.3 ± 0.4	1026.8 ± 4.2	β−qtz	298	20.63	104.60	−0.03	—	—
			hex	500	47.36	33.47	—	—	0.2
			liq	1447	52.55	32.89	—	—	4.8
$BeF_2(g)$	227.4	796.0	gas	298	51.17	8.45	−6.65	—	—
			gas	1000	61.84	0.17	−32.76	—	—
BeH_2	17.6 ± 4.2	19.0 ± 2.1	cryst	298	20.50	29.29	—	—	—
$BeH_2(g)$	173.2	−125.5	gas	298	31.38	23.43	−8.16	−4.77	—
BeI_2	120.5 ± 4.2	188.7 ± 20.9	tetrag	298	79.50	13.93	—	—	—
			liq	753	112.97	—	—	—	20.9
Be_3N_2	34.3 ± 0.2	589.5 ± 2.5	cubic	298	53.93	103.55	−17.66	—	—
			hex	430	114.52	15.06	−59.54	—	17.8
			liq	2470	158.99	—	—	—	129.3
BeO	13.8 ± 0.4	609.4 ± 3.3	hex	298	41.59	10.21	−17.24	−1.34	—
			cubic	2370	46.86	4.60	—	—	6.7
			liq	2780	64.85	—	—	—	84.9
$BeAl_2O_4$	66.3 ± 0.4	2301.2 ± 5.9	orth	298	368.78	66.44	−101.67	−1.97	—
$BeAl_6O_{10}$	175.6 ± 0.4	5624.1 ± 10.0	cryst	298	389.32	47.07	−123.22	—	—
$Be_3B_2O_6$	92.5 ± 12.6	3133.8 ± 4.2	cryst	298	142.26	211.12	−54.81	−66.02	—
$Be(OH)_2$	50.2 ± 5.0	905.8 ± 2.1	β	298	19.54	153.76	—	—	—
BeS	33.5 ± 6.3	233.5 ± 4.2	cubic	298	41.71	8.12	−9.62	—	—
$BeSO_4$	78.0 ± 0.8	1200.8 ± 3.3	tetrag	298	112.80	−9.25	−27.70	76.02	—
			β	863	162.05	—	—	—	1.1
			gamma	908	290.03	−52.55	−717.56	8.49	19.5
$BeSO_4.2H_2O$	163.2	1820.9		298	71.55	269.87	—	—	—
Be_2SiO_4	64.4 ± 0.4	2146.0 ± 8.4	trigon	298	124.06	78.53	−45.35	−33.47	—
$BeWO_4$	88.4	1513.4	cryst	298	112.38	42.89	−25.10	—	—
Bi	56.7	0.0	rhomb	298	11.84	30.46	4.10	—	—
			liq	545	19.04	10.38	20.75	−3.97	11.3
			liq	1200	27.20	—	—	—	—
Bi(g)	186.9	−209.6	gas	298	20.92	—	—	—	—
$Bi_2(g)$	273.2	−220.1	gas	298	37.24	—	—	—	—
$BiBr_3$	181.6 ± 6.3	276.1 ± 8.4	cryst	298	97.49	25.10	—	—	—
			liq	492	157.74	—	—	—	21.8

BiCl(g)	255.0± 0.4	−25.1± 8.4	gas	298	37.32	0.84	−1.17	—	—
$BiCl_3$	171.5± 8.4	378.7± 5.0	cubic	298	68.83	133.89	—	—	—
			liq	507	127.61	—	—	—	23.6
BiF(g)	244.0± 0.4	29.3±20.9	gas	298	37.03	0.84	−2.55	—	—
BiF_3	122.6± 5.9	910.4±14.6	cubic	298	104.56	99.75	—	180.50	—
			liq	922	184.60	—	—	—	21.6
BiH(g)	214.7± 0.2	−179.9±29.3	gas	298	37.78	—	−9.37	—	—
BiI_3	224.7± 6.3	150.6± 6.3	hex	298	39.96	110.04	2.97	—	—
			liq	681	157.74	—	—	—	39.1
Bi_2O_3	151.5± 2.9	570.7± 3.3	monocl	298	103.51	33.47	—	—	—
			cubic	978	146.44	—	—	—	56.9
			liq	1097	152.72	—	—	—	59.8
BiOCl	102.5±12.6	371.1± 4.2	tetrag	298	57.32	43.10	—	—	—
Bi_2S_3	200.4± 6.3	201.7	orth	298	114.47	27.70	—	—	—
			liq	1036	188.28	—	—	—	79.5
$Bi_2(SO_4)_3$	312.5±18.8	2543.9±25.1	cryst	298	228.45	169.03	—	—	—
Bi_2Se_3	239.7± 8.4	140.2± 3.3	rhomb	298	118.53	19.25	—	—	—
			liq	995	188.28	—	—	—	86.6
Bi_2Te_3	261.1± 8.4	78.7± 2.1	hex	298	107.99	55.23	—	—	—
			liq	850	167.36	—	—	—	119.7
Br_2	152.2	0.0	liq	298	75.73	—	—	—	—
$Br_2(g)$	245.3	−30.9	gas	298	37.36	0.46	−1.30	—	—
Br(g)	174.9	−111.9	gas	298	19.87	1.49	0.42	—	—
C	5.7	0.0	graph	298	0.11	38.94	−1.48	−17.38	—
				1100	24.43	0.44	−31.63	—	—
C(d)	2.4± 0.1	− 1.5± 0.1	diam	298	9.12	13.22	−6.19	—	—
C(g)	158.0	−716.7	gas	298	20.77	0.05	—	—	—
			gas	2000	19.49	0.72	—	—	—
$C_2(g)$	199.3± 0.1	−832.6± 5.9	gas	298	30.69	4.75	10.18	−0.43	—
$C_3(g)$	237.2	−820.1±12.6	gas	298	31.84	14.98	1.21	−2.62	—
$CBr_4(g)$	358.0± 0.8	−50.2	gas	298	105.90	1.14	−13.68	—	—
CCl_4	214.4± 1.3	135.4± 2.1	liq	298	133.89	—	—	—	—
$CCl_4(g)$	309.8± 0.4	102.9± 2.1	gas	298	104.18	2.01	−19.82	—	—
$CF_2(g)$	240.7± 1.3	171.5±18.8	gas	298	43.01	16.32	−7.87	−4.69	—
$CF_3(g)$	260.9± 3.8	484.1±13.8	gas	298	58.16	26.32	−13.31	−7.45	—
$CF_4(g)$	261.3± 0.4	933.2±10.5	gas	298	85.75	18.37	−27.51	−3.87	—
$C_2F_6(g)$	332.0± 1.7	1325.5±25.1	gas	298	136.23	46.82	−38.66	−13.64	—
$CF_2Cl_2(g)$	300.7	475.3	gas	298	107.65	—	−31.38	—	—
$CFCl_3(g)$	309.8	277.0	gas	298	108.07	—	−26.78	—	—
$CH_2(g)$	181.2± 1.7	−397.5±20.9	gas	298	25.26	27.37	−1.44	−6.00	—
$CH_3(g)$	192.9	−133.6	gas	298	22.97	49.16	−0.03	−11.66	—

TABLE I—*continued*

Substance	$S_{298} \pm \delta S$ (J/deg mol)	$-\Delta H_{298} \pm \delta H$ (kJ/mol)	Phase	T K	$C_p = A + BT + C/T^2 + DT^2$				H_t (kJ/mol)
					A	$B \times 10^3$ (J/deg mol)	$C \times 10^{-5}$ (J/deg mol)	$D \times 10^6$ (J/deg mol)	
$CH_4(g)$	186.3 ± 0.2	74.8 ± 0.4	gas	298	12.45	76.69	1.45	−17.99	—
$C_2H_2(g)$	200.8 ± 0.2	−226.8 ± 1.3	gas	298	43.63	31.65	−7.51	−6.32	—
$C_2H_4(g)$	219.2 ± 0.4	−52.5 ± 0.4	gas	298	32.64	59.83	—	—	—
$C_2H_6(g)$	229.5 ± 0.4	84.7 ± 0.8	gas	298	28.19	122.63	−9.12	−27.82	—
$CH_3Cl(g)$	234.3 ± 0.4	83.7 ± 2.1	gas	298	42.51	44.89	−13.74	−8.47	—
$CN(g)$	202.5 ± 0.4	−435.1	gas	298	27.82	5.69	−0.46	−0.33	—
$C_2N_2(g)$	241.5 ± 0.6	−309.1 ± 2.1	gas	298	56.07	27.45	−6.23	−6.86	—
$CO(g)$	197.5	110.5	gas	298	28.41	4.10	−0.46	—	—
$CO_2(g)$	213.7	393.5	gas	298	44.14	9.04	−8.54	—	—
$COCl_2(g)$	283.7 ± 0.8	220.1 ± 5.0	gas	298	65.02	18.16	−11.13	−4.98	—
$COF(g)$	248.1 ± 1.7	171.5	gas	298	39.37	18.66	−5.19	−5.19	—
$COF_2(g)$	258.8 ± 0.4	633.9 ± 5.4	gas	298	53.22	30.42	−12.97	−8.37	—
$CH_2O(g)$	218.7 ± 0.2	115.9 ± 0.8	gas	298	21.07	53.87	0.78	−13.4	—
CH_3OH	126.6 ± 0.8	239.5 ± 0.4	liq	298	81.59	—	—	—	—
$CH_3OH(g)$	239.7 ± 0.8	202.0 ± 0.4	gas	298	4.31	128.72	4.54	−44.10	—
C_2H_5OH	161.0 ± 0.4	277.0 ± 0.8	liq	298	112.13	—	—	—	—
$C_2H_5OH(g)$	282.4 ± 2.1	234.6 ± 0.8	gas	298	31.38	112.97	—	—	—
$CS(g)$	210.5 ± 0.2	−280.3 ± 25.1	gas	298	29.37	8.66	−1.86	−2.38	—
CS_2	151.3 ± 0.8	−89.1 ± 1.0	liq	298	76.99	—	—	—	—
$CS_2(g)$	237.9 ± 0.2	−116.9 ± 1.3	gas	298	49.58	13.68	−6.99	−3.77	—
$COS(g)$	231.5 ± 0.4	138.5 ± 1.0	gas	298	47.40	9.12	−7.66	—	—
Ca	41.6	0.0	fcc	298	16.02	21.51	2.55	—	—
			bcc	716	−0.45	41.35	—	—	0.9
			liq	1115	33.47	—	—	—	8.5
$Ca(g)$	154.8	−177.8	gas	298	20.79	—	—	—	—
$CaAl_2$	85.4 ± 10.0	216.7 ± 16.7	cubic	298	82.84	7.95	−11.21	—	—
			liq	1353	94.14	—	—	—	63.2
$CaBr_2$	129.7 ± 4.2	682.8 ± 4.2	tetrag	298	77.24	9.62	−5.48	—	—
			liq	1015	112.97	—	—	—	29.1
$CaBr_2(g)$	420.9 ± 8.4	384.9 ± 8.4	gas	298	62.34	—	−1.72	—	—
CaC_2	70.3 ± 1.7	59.4 ± 5.0	tetrag	298	68.62	11.88	−8.66	—	—
				720	64.43	8.37	—	—	5.6
$CaCl_2$	108.4	795.0 ± 3.3	tetrag	298	69.83	15.40	−1.59	—	—
			liq	1045	122.26	−14.90	0.71	—	28.2

$CaCl_2(g)$	287.4	481.6	gas	298	62.13	0.14	−2.55	—	—
CaF_2	68.9 ± 0.4	1229.3	cubic	298	41.05	55.48	8.49	—	—
			cubic	1430	154.10	—	−729.69	—	—
			liq	1691	99.16	—	—	—	31.2
$CaF_2(g)$	273.7	800.0	gas	298	57.24	0.61	−5.44	—	—
$CaH(g)$	201.7 ± 0.4	−228.9	gas	298	32.13	3.10	−2.93	—	—
CaH_2	41.8 ± 6.3	181.6 ± 8.4	orth	298	29.92	37.24	—	—	—
			β	1053	69.04	—	—	—	6.7
			liq	1273	75.31	—	—	—	22.0
CaI_2	145.3 ± 0.4	533.0 ± 2.1	hex	298	71.34	19.75	—	—	—
			liq	1052	103.34	—	—	—	41.8
$CaI_2(g)$	327.4 ± 8.4	258.2 ± 16.7	gas	298	62.38	—	−1.51	—	—
$CaMg_2$	102.6 ± 1.0	39.3 ± 1.7	hex	298	66.94	26.07	−0.86	—	—
Ca_3N_2	107.9 ± 11.7	439.3 ± 12.6	cubic	298	138.78	15.48	−26.36	—	—
CaO	38.1 ± 0.3	634.9 ± 0.8	cubic	298	50.42	4.18	−8.49	—	—
			liq	2900	83.68	—	—	—	52.3
$Ca_3Al_2O_6$	205.4 ± 1.3	3589.5 ± 4.6	cubic	298	260.58	19.16	−50.25	—	—
$CaAl_2O_4$	114.0 ± 0.8	2325.9 ± 2.1		298	150.62	24.94	−33.30	—	—
$CaAl_4O_7$	177.8 ± 1.3	3999.1 ± 3.3		298	276.52	22.93	−74.48	—	—
$Ca_3B_2O_6$	183.7 ± 1.3	3424.6 ± 3.8	cryst	298	236.14	43.60	−54.48	—	—
			liq	1763	393.30	—	—	—	148.5
$Ca_2B_2O_5$	145.2 ± 0.8	2722.9 ± 5.0	α	298	183.05	48.12	−44.73	—	—
			β	804	218.78	10.04	—	—	4.6
			liq	1583	285.35	—	—	—	100.8
CaB_2O_4	105.9 ± 0.8	2027.1 ± 3.8	cryst	298	129.79	40.84	−33.76	—	—
			liq	1433	258.15	—	—	—	74.1
CaB_4O_7	134.7 ± 1.3	3340.9 ± 6.3	cryst	298	214.81	80.17	−71.80	—	—
			liq	1263	444.76	—	—	—	113.4
$CaCO_3$	92.7 ± 0.8	1206.9 ± 2.9	calcit	298	104.52	21.92	−25.94	—	—
$CaOCl_2$	113.0 ± 9.2	746.4		298	83.68	55.65	—	—	—
$CaCr_2O_4$	125.2	1829.7	cryst	298	169.66	13.26	−23.97	—	—
$Ca_2Fe_2O_5$	188.7 ± 1.3	2133.8 ± 5.4	cryst	298	248.61	—	−48.87	—	—
			liq	1750	310.45	—	—	—	151.0
$CaFe_2O_4$	145.2 ± 0.8	1479.5	cryst	298	164.93	19.92	−15.31	—	—
			liq	1489	229.70	—	—	—	108.4
$CaGeO_3$	87.4	1285.3 ± 5.4	tricl	298	120.50	16.11	−24.69	—	—
$CaOH(g)$	239.8	179.9	gas	298	211.71	17.57	−19.04	—	—
$Ca(OH)_2$	83.4 ± 0.4	−19.04 ± 1.3	hex	298	104.01	15.19	−18.74	—	—
$CaHfO_3$	99.2 ± 8.4	1779.9 ± 10.0	monocl	298	121.71	13.56	−17.78	—	—
$CaO.MgO$	66.3 ± 1.7	1243.1 ± 1.7		298	97.82	7.66	−18.24	—	—
$CaMg(CO_3)_2$	155.2 ± 0.4	2315.0 ± 5.0	dolom	298	156.98	80.33	−21.34	—	—

TABLE I—*continued*

Substance	$S_{298} \pm \delta S$ (J/deg mol)	$-\Delta H_{298} \pm \delta H$ (kJ/mol)	Phase	T K	$C_p = A + BT + C/T^2 + DT^2$				H_t (kJ/mol)
					A	$B \times 10^3$ (J/deg mol)	$C \times 10^{-5}$ (J/deg mol)	$D \times 10^6$ (J/deg mol)	
$CaMoO_4$	122.6± 1.0	1546.0± 3.3	tetrag	298	133.47	29.20	−22.34	—	—
$Ca(NO_3)_2$	193.2	936.8	cryst	298	122.88	154.01	−17.28	—	—
$CaNb_2O_6$	178.4±13.0	2675.2±17.2		298	214.64	20.92	−38.70	—	—
Ca_3P_2	123.8±18.8	506.3±25.1	cryst	298	107.95	28.03	—	—	—
$Ca_3(PO_4)_2$	236.0± 1.3	4117.1±25.1	rhomb	298	201.84	163.51	−20.92	—	—
			monocl	1373	330.54	—	—	—	15.5
$Ca_2P_2O_7$	189.2± 0.4	3336.7±20.9	α	298	221.88	61.76	−46.69	—	—
			β	1413	318.61	—	—	—	6.7
			liq	1626	405.01	—	—	—	100.8
$CaHPO_4$	111.4± 0.8	1814.2±20.9		298	138.41	55.10	−40.38	—	—
Ca_2Pb	126.4± 7.1	209.2±12.6	orth	298	62.43	22.01	—	—	—
CaS	56.5± 1.3	473.2± 3.8	cubic	298	50.63	3.70	−3.89	—	—
CaS(g)	232.4	−116.7±20.9	gas	298	37.20	0.11	−2.28	—	—
$CaSO_4$	106.7± 1.7	1434.1± 4.2	orth	298	70.21	98.74	—	—	—
$CaSO_4.1/2H_2O$	130.5± 2.5	1575.5±14.6		298	69.33	163.18	—	—	—
$CaSO_4.2H_2O$	194.1± 1.3	2021.4±14.6	gypsum	298	91.38	317.98	—	—	—
Ca_3Sb_2	157.3±18.8	728.0±37.7	hex	298	105.02	29.50	—	—	—
CaSe	69.0± 6.3	368.2±33.5	cubic	298	45.61	8.37	—	—	—
CaSi	45.2	150.6± 9.2	orth	298	42.68	15.06	—	—	—
Ca_3SiO_5	168.6± 1.3	2928.8± 7.9		298	208.57	36.07	−42.47	—	—
Ca_2SiO_4	120.5± 0.8	2328.4± 5.4	olivin	298	133.30	51.80	−19.41	—	—
			larnit	970	134.56	46.11	—	—	10.9
				1710	205.02	—	—	—	14.2
Ca_2SiO_4(b)	127.6± 0.8	2319.6± 5.4	larnit	298	145.90	40.75	−26.19	—	—
$Ca_3Si_2O_7$	210.9±1.3	3942.6±12.6	rankin	298	257.36	55.81	−53.64	—	—
$CaSiO_3$	83.1± 0.8	1635.1± 2.1	wollas	298	111.46	15.06	−27.28	—	—
			ps.wol	1463	108.16	16.48	−23.64	—	5.7
			liq	1817	146.44	—	—	—	82.8
$CaSiO_3$(p)	87.4± 0.8	1628.0± 2.5	ps.wol	298	108.16	16.48	−23.64	—	—
$CaO.Al_2O_3.2SiO_2$	202.5	4223.7± 5.9	anorth	298	297.06	43.39	−135.35	—	—
$CaO.Al_2O_3.SiO_2$	144.8	3293.2± 7.5	pyrox	298	233.22	21.13	−73.72	—	—
$2CaO.Al_2O_3.SiO_2$	198.3	3989.4± 5.9	gehlen	298	275.47	27.91	−78.20	—	—
$3CaO.Al_2O_3.3SiO_2$	241.4	6646.3±17.6	gross	298	456.31	49.20	−131.42	—	—
$CaO.MgO.SiO_2$	110.5± 4.2	2263.1± 8.8	monti	298	150.62	32.01	−32.84	—	—

$CaO.MgO.2SiO_2$	143.1 ± 0.8	3203.3 ± 8.4	diops	298	186.02	123.76	−55.90	−43.93	—
			liq	1665	355.64	—	—	—	128.4
$2CaO.MgO.2SiO_2$	209.2	3876.9	akerm	298	251.88	47.24	−48.03	—	—
$2CaO.5MgO.8SiO_2.H_2O$	548.9	12358.7 ± 24.3	tremol	298	764.00	271.12	−168.20	—	—
$3CaO.MgO.2SiO_2$	253.1	4566.8 ± 15.9	merwin	298	305.01	50.38	−60.25	—	—
$Ca_4Ti_3O_{10}$	328.4 ± 10.5	5671.8 ± 18.8	orth	298	424.05	21.59	−82.42	—	—
$CaTiO_3$	93.7 ± 0.8	1660.6 ± 5.0	cubic	298	127.49	5.69	−27.99	—	—
			orth	1530	134.01	—	—	—	2.3
$CaO.TiO_2.SiO_2$	129.3	2598.7 ± 6.3	sphene	298	177.36	23.18	−40.29	—	—
			liq	1673	279.49	—	—	—	123.8
$CaUO_4$	121.1 ± 0.4	1998.3 ± 3.8		298	120.42	45.52	−9.46	—	—
$Ca_3V_2O_8$	274.9 ± 2.1	3777.7 ± 8.4		298	226.81	101.34	—	—	—
$Ca_2V_2O_7$	220.5 ± 1.7	3082.8 ± 6.7		298	177.82	121.00	—	—	—
CaV_2O_6	179.1 ± 1.7	2328.8 ± 5.4		298	135.23	119.16	—	—	—
$CaWO_4$	126.4 ± 0.8	1624.2 ± 12.1	scheel	298	134.56	20.67	−24.43	—	—
Ca_3WO_6	195.0 ± 14.6	2933.0 ± 16.3		298	236.52	29.71	−38.33	—	—
$CaZrO_3$	93.7 ± 8.4	1766.5 ± 9.6	cubic	298	119.24	12.05	−21.00	—	—
Cd	51.8	0.0	hex	298	22.05	12.55	0.14	—	—
			liq	594	29.71	—	—	—	6.2
Cd(g)	167.7	111.8	gas	298	20.79	—	—	—	—
Cd_3As_2	207.1 ± 10.5	38.1 ± 8.4	tetrag	298	136.19	11.92	−12.84	—	—
$CdBr_2$	138.8	315.3 ± 1.7	hex	298	79.96	21.09	−8.49	—	—
			liq	568	101.67	—	—	—	33.5
$CdBr_2(g)$	309.6 ± 3.3	140.0 ± 5.0	gas	298	65.40	—	−4.60	—	—
$CdCl_2$	115.3 ± 0.4	390.8 ± 1.3	hex	298	47.28	91.63	—	—	—
			liq	842	110.04	—	—	—	30.5
$CdCl_2(g)$	285.8 ± 2.9	194.6 ± 6.3	gas	298	63.30	—	−4.60	—	—
CdF_2	83.7 ± 6.3	700.4 ± 2.1	cubic	298	60.04	23.01	—	—	—
$CdF_2(g)$	265.3 ± 2.5	395.0 ± 4.2	gas	298	61.30	—	−6.90	—	—
CdI_2	158.3 ± 0.8	204.2 ± 2.5	hex	298	67.57	37.66	—	—	—
			β	595	89.96	—	—	—	—
			liq	661	102.09	—	—	—	20.7
$CdI_2(g)$	325.5 ± 3.8	60.2 ± 4.6	gas	298	66.23	—	−5.02	—	—
CdO	54.8 ± 1.7	258.4 ± 0.8	cubic	298	48.24	6.36	−5.31	—	—
$CdAl_2O_4$	125.1 ± 12.1	1916.9 ± 2.5	cubic	298	160.04	23.85	−33.05	—	—
$CdCO_3$	92.5 ± 5.0	751.9 ± 8.4	hex	298	43.10	131.80	—	—	—
$CdGa_2O_4$	139.7 ± 12.6	1355.6 ± 2.1	cubic	298	161.13	21.84	−25.90	—	—
$Cd(NO_3)_2$	207.9 ± 10.9	456.5 ± 4.6	cubic	298	179.91	—	—	—	—
			tetrag	431	213.38	—	—	—	2.9
CdS	69.0 ± 2.1	149.4 ± 2.9	hex	298	44.56	13.81	—	—	—
$CdSO_4$	123.1 ± 0.4	934.3 ± 1.3	rhomb	298	76.73	77.40	—	—	—

TABLE I—*continued*

Substance	$S_{298} \pm \delta S$ (J/deg mol)	$-\Delta H_{298} \pm \delta H$ (kJ/mol)	Phase	T K	$C_p = A + BT + C/T^2 + DT^2$				H_t (kJ/mol)
					A	$B \times 10^3$ (J/deg mol)	$C \times 10^{-5}$ (J/deg mol)	$D \times 10^6$ (J/deg mol)	
CdSb	95.6± 0.8	13.3± 1.3	orth	298	44.52	19.41	—	—	—
			liq	729	143.13	−75.44	—	—	35.6
CdSe	83.3± 2.1	144.8± 2.1	hex	298	46.82	9.33	—	—	—
$CdSeO_3$	138.1	576.6	cryst	298	78.45	54.39	—	—	—
$CdSiO_3$	97.5± 1.3	1189.3± 3.3	monocl	298	87.86	42.68	−10.46	—	—
CdTe	95.2± 0.8	100.8± 0.8	cubic	298	52.51	19.00	−7.36	—	—
			liq	1370	64.85	—	—	—	43.9
$CdTiO_3$	104.6± 8.4	1186.6± 2.9	hex	298	116.11	9.62	−18.20	—	—
Ce	56.9	0.0	fcc	298	22.38	15.06	—	—	—
			bcc	998	37.66	—	—	—	3.0
			liq	1071	37.66	—	—	—	5.2
Ce(g)	191.6	417.1	gas	298	24.89	15.02	−6.69	−3.77	—
$CeBr_3$	182.0	887.0	hex	298	94.73	24.52	−0.29	—	—
			liq	1006	152.72	—	—	—	51.9
Ce_2C_3	173.6±15.9	176.6± 6.7	cubic	298	122.38	11.92	−20.08	—	—
CeC_2	90.0± 7.9	97.1± 7.1	tetrag	298	68.62	9.20	−9.20	—	—
$CeCl_3$	149.8± 7.5	1058.1± 1.7	hex	298	97.49	13.60	−5.02	—	—
			liq	1095	145.18	—	—	—	54.0
CeF_3	115.2± 0.4	1732.6± 8.4	hex	298	74.94	38.79	15.44	—	—
			liq	1705	125.02	—	—	—	58.6
CeH_2	55.8± 0.4	193.3	cubic	298	35.15	19.25	—	—	—
CeI_3	214.6±14.6	649.8± 9.2	orth	298	80.12	60.75	3.77	—	—
			liq	1034	152.72	—	—	—	51.0
CeN	60.7± 8.4	326.4±25.1	cubic	298	48.53	6.07	−7.24	—	—
Ce_2O_3	148.1± 0.4	1799.7± 1.3	cubic	298	139.33	11.63	−24.23	—	—
				1050	126.78	32.30	−9.29	—	—
				1800	154.81	—	—	—	—
CeO_2	62.3± 0.3	1090.4± 0.8	cubic	298	64.81	17.70	−7.61	—	—
$CeAlO_3$	95.4± 8.4	1800.8± 2.9	ortho	298	107.19	29.58	−18.87	—	—
$CeCrO_3$	109.2±11.7	1533.0±11.7		298	113.60	25.31	−12.43	—	—
CeS	78.2± 1.3	456.5± 8.4	cubic	298	52.54	13.55	−5.89	—	—
Ce_3S_4	255.2±12.6	1652.7±20.9	cubic	298	167.82	39.66	—	—	—
Ce_2S_3	180.3± 1.7	1188.3±12.6	cubic	298	124.93	12.72	—	—	—
Ce_2O_2S	130.5± 7.5	1696.6±15.1	hexag	298	124.89	23.64	−20.92	—	—
$Ce_2(SO_4)_3$	287.4±23.0	3955.1± 4.6	cryst	298	221.75	198.74	—	—	—

$Cl_2(g)$	223.0	0.0	gas	298	36.99	0.71	−2.93	—	—
Cl(g)	165.1	−121.3	gas	298	23.79	−1.28	−1.40	—	—
ClF(g)	217.8± 0.2	50.8± 1.3	gas	298	36.30	1.00	−4.18	—	—
$ClF_3(g)$	281.5± 0.4	158.9± 1.3	gas	298	80.79	1.21	−14.69	—	—
$Cl_2O(g)$	267.9± 0.4	−81.4± 1.7	gas	298	56.78	0.73	−8.39	—	—
$ClO_2(g)$	257.1± 0.4	−93.3± 2.1	gas	298	55.56	1.53	−12.55	—	—
Co	30.0	0.0	hcp	298	18.12	23.14	−0.42	−0.08	—
			fcc	700	18.12	23.14	−0.42	−0.08	0.5
			fcc	1390	18.12	23.14	−0.42	−0.08	5.1
			liq	1768	40.50	—	—	—	16.2
Co(g)	179.4	−424.7	gas	298	27.03	−0.21	−3.59	—	—
CoAl	54.4	110.5± 8.4	cubic	298	42.68	12.55	—	—	—
			liq	1901	71.13	—	—	—	62.8
$CoBr_2$	133.9± 8.4	215.7± 2.1	hex	298	73.39	20.92	—	—	—
			cubic	648	92.05	—	—	—	—
$CoCl_2$	109.3± 0.4	312.5± 1.7	hex	298	82.09	6.74	−4.98	—	—
			liq	1013	99.16	—	—	—	44.8
$CoCl_2(g)$	298.3± 8.4	93.7± 8.4	gas	298	58.41	7.49	−0.73	−2.13	—
CoF_2	82.0± 0.4	671.5± 9.2	tetrag	298	64.02	15.56	—	—	—
CoF_3	94.6±12.6	789.9±12.6	hex	298	97.82	7.03	−7.49	—	—
CoI_2	153.1±10.5	85.8±10.5	hex	298	72.38	25.10	—	—	—
CoO	53.0± 0.4	237.7± 0.6	cubic	298	55.40	−6.44	—	7.11	—
Co_3O_4	114.3± 8.4	910.0± 4.6	cubic	298	140.75	17.28	−24.35	53.97	—
$CoAl_2O_4$	99.6± 2.9	1946.8± 3.8	cubic	298	165.69	18.83	−34.73	—	—
$CoCO_3$	87.9± 0.4	702.5±12.6	hex	298	88.28	38.91	−17.99	—	—
$CoCr_2O_4$	126.8± 0.8	1432.2± 6.7	spinel	298	167.65	17.74	−13.97	—	—
$CoFe_2O_4$	142.7± 8.4	1088.7± 4.6	cubic	298	173.22	54.39	−32.76	—	—
				740	215.06	571.12	—	—	—
				784	657.72	−541.83	—	—	—
$Co(OH)_2$	93.3± 1.7	541.4± 6.3	hex	298	82.84	47.70	—	—	—
$Co(NO_3)_2$	177.0	421.3± 3.8	cryst	298	131.80	83.68	—	—	—
Co_2P	77.4	187.4±17.2	rhomb	298	57.95	23.01	—	—	—
CoP	50.2	125.5±18.0	rhomb	298	40.92	14.64	—	—	—
CoP_3	98.3	204.6±31.8	cryst	298	93.72	25.10	—	—	—
$CoS_{0.89}$	51.5± 3.3	94.6± 4.2	cubic	298	40.25	15.52	—	—	—
Co_3S_4	184.1±20.9	359.0±25.1	cubic	298	143.30	76.57	—	—	—
CoS_2	69.0± 6.3	153.1± 8.4	cubic	298	60.67	25.31	—	—	—
$CoSO_4$	117.4± 1.3	888.3± 1.7	rhomb	298	122.59	40.29	−27.95	—	—
				964	168.62	—	—	—	2.1
CoSb	70.7± 5.4	41.8± 7.9	hex	298	42.26	25.94	—	—	—
$CoSeO_3$	128.0	577.4±10.5	cryst	298	79.91	59.83	—	—	—
			liq	932	144.35	—	—	—	16.3

TABLE I—*continued*

Substance	$S_{298} \pm \delta S$ (J/deg mol)	$-\Delta H_{298} \pm \delta H$ (kJ/mol)	Phase	T K	$C_p = A + BT + C/T^2 + DT^2$				H_t (kJ/mol)
					A	$B \times 10^3$ (J/deg mol)	$C \times 10^{-5}$ (J/deg mol)	$D \times 10^6$ (J/deg mol)	
CoSi	42.7± 2.9	95.1± 7.9	cubic	298	49.16	12.09	−7.53	—	—
			liq	1733	87.36	—	—	—	69.2
$CoSi_2$	64.0± 5.0	98.7±10.0	cubic	298	70.86	18.66	−9.92	—	—
			liq	1600	116.11	—	—	—	100.0
Co_2SiO_4	158.6± 4.2	1398.7± 4.6	orth	298	157.40	22.05	−26.69	—	—
			liq	1690	242.67	—	—	—	100.4
$CoTiO_3$	96.9± 3.3	1207.5± 3.8	trigon	298	123.47	9.71	−14.64	—	—
$CoWO_4$	126.4± 9.2	1142.2± 3.8	monocl	298	115.48	48.53	—	—	—
			β	986	122.38	41.92	—	—	1.9
Cr	23.6	0.0	bcc	298	21.76	8.98	−0.96	2.26	—
			liq	2130	39.33	—	—	—	17.2
Cr(g)	174.2	−397.5	gas	298	20.79	—	—	—	—
			gas	900	9.58	6.95	41.34	—	—
Cr_5B_3	137.7	248.9	tetrag	298	153.13	79.08	—	—	—
CrB	29.0	78.9orth		298	42.34	16.02	−10.04	—	
Cr_3B_4	91.8	281.2	orth	298	134.31	57.74	−39.12	—	—
CrB_2	32.9	125.5	hex	298	60.04	21.88	−18.62	—	—
$CrBr_2$	134.7± 7.1	302.1±18.8	monocl	298	65.90	22.18	—	—	—
$Cr_{23}C_6$	612.1± 4.2	328.4±37.7	cubic	298	683.25	209.20	−104.6	—	—
Cr_7C_3	201.0± 1.3	160.7±16.7	hex	298	233.89	62.34	−38.07	—	—
Cr_3C_2	85.4± 0.4	85.4±12.6	orth	298	123.26	25.90	−28.24	—	—
$CrCl_2$	115.3± 0.4	395.4±10.5	orth	298	63.81	24.94	—	—	—
$CrCl_3$	124.7± 0.4	570.3±10.9	monocl	298	79.50	41.21	—	—	—
CrF_2	85.8± 6.3	775.3±11.7	monocl	298	61.63	19.50	−8.03	—	—
CrF_3	94.1± 0.4	1159.0± 8.4	hex	298	68.62	34.31	—	—	—
CrI_2	169.0	158.2± 5.9	monocl	298	66.94	22.59	—	—	—
CrI_3	199.6±10.9	205.0± 6.7	hex	298	105.44	20.92	—	—	—
Cr_2N	65.3± 8.4	125.5±12.6	hex	298	65.14	26.23	−6.15	—	—
CrN	37.7± 2.1	117.2± 8.4	cubic	298	41.17	16.32	—	—	—
Cr_2O_3	81.2± 1.3	1134.7± 7.5	rhomb	298	119.37	9.20	−15.65	—	—
CrO_3	73.2	587.0±10.9	orth	298	71.76	87.86	−16.74	—	—
$CrO_3(g)$	270.7±12.6	292.0	gas	298	82.55	—	−21.97	—	—
$Cr(CO)_6$	314.2± 6.3	1077.4± 4.2	orth	298	203.76	75.31	−19.87	—	—
$CrO_2Cl_2(g)$	329.7± 2.9	528.9±11.7	gas	298	106.61	—	—	—	—

CrS	64.0± 6.3	155.6± 9.6	monocl	298	32.84	46.74	—	—	—
				450	51.64	4.90	—	—	0.3
$Cr_2(SO_4)_3$	258.8± 2.1	2931.3±15.9		298	358.07	79.50	−89.75	—	—
Cr_3Si	85.8± 6.3	92.0±16.7	cubic	298	82.22	42.38	−4.31	—	—
Cr_5Si_3	169.0±12.6	211.3±31.4	tetrag	298	198.57	49.29	25.61	—	—
				1300	586.85	−543.08	—	225.31	—
CrSi	43.7± 3.3	54.8± 8.4	cubic	298	52.01	8.74	−8.41	—	—
$CrSi_2$	58.6± 4.6	79.9±12.6	hex	298	65.61	22.51	−7.74	—	—
			liq	1730	89.96	—	—	—	127.8
Cs	85.2	0.0	bcc	298	32.34	—	—	—	—
			liq	302	29.89	0.90	2.03	—	2.1
			liq	700	30.94	—	—	—	—
Cs(g)	175.5	−76.5	gas	298	20.79	—	—	—	—
$Cs_2(g)$	284.5	−113.8	gas	298	37.18	2.82	—	—	—
CsBr	113.0± 0.4	405.4± 0.8	cubic	298	50.38	8.54	—	—	—
			liq	911	77.40	—	—	—	23.6
CsCl	101.2± 0.2	442.7± 0.4	cubic	298	53.35	5.15	−2.09	—	—
				743	3.35	73.64	−3.77	—	3.8
			liq	918	57.99	17.91	—	—	20.3
CsCl(g)	256.0± 0.2	242.3± 4.2	gas	298	36.82	1.05	—	—	—
CsF	93.0	553.5± 1.3	cubic	298	45.81	18.83	—	—	—
			liq	976	74.06	—	—	—	21.8
CsF(g)	243.1± 0.2	361.1± 3.3	gas	298	37.34	0.61	−1.51	—	—
CsH	66.9± 8.4	54.0± 0.4	cubic	298	31.17	35.56	—	—	—
CsH(g)	215.1± 0.2	−116.9	gas	298	37.78	—	−5.61	—	—
CsI	122.2± 0.8	346.4± 8.4	cubic	298	29.54	43.35	8.08	—	—
			liq	905	72.38	—	—	—	25.5
CsI(g)	275.2± 0.2	153.1± 2.1	gas	298	38.91	—	−1.30	—	—
Cs_2O	146.9± 0.8	346.0± 2.9	hex	298	66.36	32.01	—	—	—
CsO_2	142.3±12.6	286.2± 2.1	tetrag	298	72.38	30.96	—	—	—
$CsBO_2$	105.4± 0.6	976.8±20.9	cubic	298	52.34	66.32	−2.33	—	—
Cs_2CO_3	204.0± 0.8	1136.4± 2.1	cryst	298	115.44	69.33	−10.96	—	—
$CsClO_4$	175.3± 0.8	437.2± 1.3	rhomb	298	30.54	259.41	—	—	—
			cubic	501	176.15	—	—	—	7.5
Cs_2CrO_4	228.6± 0.4	1429.3± 3.3	cryst	298	146.06	—	—	—	36.0
CsOH	98.7± 5.0	416.7± 1.3	α	298	52.97	64.02	—	—	—
			β	410	75.31	—	—	—	1.3
			gamma	493	82.42	—	—	—	6.1
			liq	616	81.59	—	—	—	4.6
CsOH(g)	254.7± 0.8	259.4±12.6	gas	298	51.04	4.06	−2.22	—	—

TABLE I—*continued*

Substance	$S_{298} \pm \delta S$ (J/deg mol)	$-\Delta H_{298} \pm \delta H$ (kJ/mol)	Phase	T K	$C_p = A + BT + C/T^2 + DT^2$ A	$B \times 10^3$ (J/deg mol)	$C \times 10^{-5}$ (J/deg mol)	$D \times 10^6$ (J/deg mol)	H_t (kJ/mol)
Cs_2MoO_4	248.4	1514.6	rhomb	298	116.40	108.24	—	—	—
			hex	841	122.17	97.07	—	—	4.6
			liq	1230	210.04	—	—	—	31.8
$CsNO_2$	181.2± 4.2	369.4	cubic	298	91.76	—	—	—	10.9
$CsNO_3$	153.7± 0.4	505.8± 2.1	hex	298	62.76	110.46	—	—	—
			cubic	426	126.36	—	—	—	3.8
			liq	680	135.98	—	—	—	14.0
Cs_2SO_4	211.9± 0.4	1444.3± 1.3	orth	298	85.48	151.04	—	—	—
			hex	940	36.40	158.16	—	—	2.5
			liq	1286	207.11	—	—	—	36.4
Cs_2SiO_3	175.7±10.5	1558.1±15.1	cryst	298	113.72	74.64	−12.22	—	—
			liq	1100	194.56	—	—	—	39.7
Cs_2UO_4	219.7± 0.8	1926.3± 4.6		298	164.85	17.03	15.27	—	—
Cu	33.1	0.0	fcc	298	30.29	−10.71	−3.22	9.47	—
			liq	1358	32.84	—	—	—	13.3
Cu(g)	166.3	−337.4	gas	298	20.79	—	—	—	—
			gas	1300	23.97	−4.60	—	1.67	—
CuBr	96.1± 0.8	104.6± 1.3	cubic	298	56.74	9.37	−4.18	—	—
			hex	665	58.58	—	—	—	7.5
			cubic	743	58.99	—	—	—	1.5
CuCl	87.0± 2.9	137.2± 2.1	cubic	298	38.28	34.98	—	—	—
			liq	700	66.94	—	—	—	10.3
$CuCl_2$	108.1± 0.4	215.5± 4.2	monocl	298	67.03	17.57	—	—	—
CuF_2	77.4± 0.2	538.9± 8.4	monocl	298	72.01	19.96	−11.38	—	—
			liq	1100	100.42	—	—	—	55.2
$CuF_2(g)$	267.0	266.9	gas	298	55.15	2.28	−6.74	—	—
CuI	96.7± 1.3	68.0± 2.1	cubic	298	31.80	74.06	—	—	—
			hex	650	66.11	—	—	—	8.2
			cubic	690	68.62	—	—	—	1.9
			liq	873	90.79	—	—	—	10.9
CuI(g)	255.6	−153.1	gas	298	37.45	—	−0.92	—	—
CuCN	90.0± 0.4	−95.0± 2.1	cryst	298	59.66	24.48	−4.35	—	—
Cu_2O	92.9± 0.3	173.2± 2.1	cubic	298	58.20	23.97	−1.59	—	—
			liq	1515	100.42	—	—	—	64.0

CuO	42.6± 0.4	161.9± 1.7	monocl	298	46.44	11.55	−7.11	2.59	—
$CuAl_2O_4$	99.6± 2.9	1946.8± 4.6	cubic	298	155.64	34.10	−33.89	—	—
$CuCO_3$	87.9	596.2± 9.2		298	92.05	38.91	−17.99	—	—
$CuCr_2O_4$	130.5± 9.2	1293.3± 7.5	tetrag	298	166.31	20.92	−21.76	—	—
$CuFeO_2$	88.9± 1.0	513.0± 4.2	hex	298	97.99	7.53	−17.99	—	—
			β	1090	91.50	15.06	—	—	0.4
			liq	1470	126.69	—	—	—	64.4
$CuFe_2O_4$	146.7	969.0	tetrag	298	139.62	117.78	−23.43	—	—
			cubic	675	227.19	—	—	—	0.8
			cubic	795	166.02	41.00	—	—	—
$Cu(OH)_2$	87.0± 8.4	443.5± 5.4	orth	298	86.99	23.26	−5.40	—	—
Cu_3P	119.2	151.0±12.6	hex	298	77.82	33.47	—	—	—
Cu_2S	120.9± 1.7	79.5± 1.7	orth	298	52.84	78.74	—	—	—
			hex	376	112.05	−30.75	—	—	3.8
			cubic	717	84.64	—	—	—	1.2
			liq	1402	89.12	—	—	—	9.6
CuS	66.5± 2.1	52.3± 4.2	hex	298	44.35	11.05	—	—	—
Cu_5FeS_4	362.3	380.3	tetrag	298	208.20	146.77	−5.65	—	—
			cubic	485	−143.55	1033.45	—	—	6.0
			cubic	540	189.03	117.49	−260.91	—	—
$CuFeS_2$	125.0	190.4	tetrag	298	86.99	53.56	−5.61	—	—
			cubic	830	−1441.97	1844.98	—	—	10.0
			cubic	930	172.46	—	—	—	—
$CuSO_4$	109.2± 0.4	771.4± 1.3	rhomb	298	73.43	152.84	−12.30	−71.59	—
$CuO.CuSO_4$	157.3	927.6	cryst	298	170.83	45.35	−39.25	—	—
$CuSO_4.H_2O$	145.1± 5.0	1082.8± 2.5	monocl	298	132.30	70.88	−18.62	—	—
$CuSO_4.3H_2O$	222.2± 5.0	1681.1± 3.3	monocl	298	204.30	71.80	−18.41	—	—
$CuSO_4.5H_2O$	301.2± 2.1	2276.5± 3.8	tricli	298	280.96	70.88	−18.58	—	—
Cu_2Sb	126.4	11.7± 1.7	cryst	298	68.53	27.61	—	—	—
Cu_2Se	129.7± 4.2	65.3± 6.3	tetrag	298	58.58	77.40	—	—	—
			cubic	395	84.10	—	—	—	6.8
CuSe	78.2± 6.3	41.8± 4.2	hex	298	54.81	—	—	—	—
			orth	326	62.76	—	—	—	1.4
CuSe(g)	264.6± 4.2	−309.6±20.9	gas	298	37.40	—	−1.13	—	—
Cu_2Te	134.7± 6.3	41.8±12.6	hex	298	59.83	53.56	—	—	—
			cubic	433	60.46	53.56	—	—	0.2
			delta	531	112.97	—	—	—	1.9
				590	133.89	—	—	—	1.0
				633	109.29	—	—	—	2.4
				841	87.86	—	—	—	2.0

TABLE I—*continued*

Substance	$S_{298} \pm \delta S$ (J/deg mol)	$-\Delta H_{298} \pm \delta H$ (kJ/mol)	Phase	T K	$C_p = A + BT + C/T^2 + DT^2$ A	$B \times 10^3$ (J/deg mol)	$C \times 10^{-5}$ (J/deg mol)	$D \times 10^6$ (J/deg mol)	H_t (kJ/mol)
Dy	74.9	0.0	hcp	298	35.35	−21.88	−2.13	18.70	—
			bcc	1654	28.03	—	—	—	4.2
			liq	1685	49.92	—	—	—	11.0
Dy(g)	195.8	−290.4	gas	298	21.40	−2.12	−0.14	2.04	—
			gas	700	21.18	−1.99	—	2.29	—
			gas	1400	11.64	9.16	21.55	−1.37	—
$DyCl_3$	147.7 ± 11.3	995.8 ± 9.2	monocl	298	94.56	17.99	−1.42	—	—
			liq	924	144.77	—	—	—	25.5
$DyCl_3$(g)	383.3 ± 6.7	714.2 ± 11.3	gas	298	79.91	—	—	—	—
DyF_3	115.1 ± 10.5	1719.6 ± 7.5	orth	298	89.62	24.56	−0.38	—	—
			liq	1430	156.90	—	—	—	58.6
Dy_2O_3	149.8 ± 12.6	1862.7 ± 3.8	cubic	298	122.59	13.22	−8.49	—	—
			monocl	1590	148.11	—	—	—	0.9
			hex	2343	155.23	—	—	—	8.4
Er	73.1	0.0	hcp	298	28.37	−2.05	—	5.73	—
			bcc	1750	42.68	—	—	—	—
			liq	1795	38.70	—	—	—	19.9
Er(g)	193.9	−317.1	gas	298	20.79	—	—	—	—
			gas	500	22.12	−3.28	−0.64	2.27	—
			gas	1500	8.76	9.49	44.33	−1.20	—
$ErCl_3$	146.9 ± 4.2	992.4 ± 2.9	monocl	298	95.56	17.57	−1.05	—	—
			liq	1050	148.53	—	—	—	32.6
ErF_3	100.8 ± 1.3	1722.6 ± 6.3	orth	298	93.09	19.96	1.67	—	—
			hex	1390	135.02	—	—	—	29.5
			liq	1419	139.12	—	—	—	27.5
Er_2O_3	154.4 ± 0.6	1897.9 ± 4.2	cubic	298	115.27	29.29	−13.81	—	—
Eu	77.8	0.0	cubic	298	33.81	−19.33	−2.22	23.85	—
			liq	765	33.81	−19.33	−2.22	23.85	0.2
			liq	1096	38.07	—	—	—	9.2
Eu(g)	188.7	−175.3	gas	298	20.79	—	—	—	—
			gas	1200	22.42	−2.52	—	0.96	—
$EuCl_3$	125.5 ± 12.6	939.3 ± 4.6	hex	298	90.50	26.15	—	—	—
			liq	897	142.26	—	—	—	33.1
EuF_3	108.8	1619.2	orth	298	80.75	45.61	8.37	—	—
			hex	920	150.62	—	—	—	6.7

EuN	63.6 ± 0.8	217.6 ± 25.1	cubic	298	51.88	5.44	—	—	—
EuO	81.6 ± 4.2	589.9 ± 5.4	cubic	298	54.39	4.18	−6.15	—	—
Eu_2O_3	146.4	1662.7 ± 3.8	cubic	298	123.85	27.11	−8.70	—	—
			monocl	895	129.96	17.41	—	—	0.5
EuS	95.4 ± 0.8	451.9 ± 16.7	cubic	298	48.74	4.81	—	—	—
EuS(g)	272.0	−88.3 ± 16.7	gas	298	37.24	0.07	−1.91	—	—
F_2(g)	202.7	0.0	gas	298	35.90	1.34	−4.48	—	—
F(g)	158.6	−79.4	gas	298	21.69	−0.44	1.16	—	—
F_2O(g)	247.3 ± 0.4	18.4	gas	298	50.42	8.66	−8.59	−2.54	—
Fe	27.3	0.0	bcc	298	28.18	−7.32	−2.90	25.04	—
			bcc	800	−263.45	255.81	619.23	—	—
			bcc	1000	−641.91	696.34	—	—	—
			bcc	1042	1946.25	−1787.50	—	—	—
			bcc	1060	−561.95	334.13	2912.11	—	—
			fcc	1184	23.99	8.36	—	—	0.9
			bcc	1665	24.64	9.90	—	—	0.8
			liq	1809	46.02	—	—	—	13.8
Fe(g)	180.8	−415.9	gas	298	26.09	−1.40	—	—	—
			gas	400	30.93	−14.31	−0.99	5.95	—
			gas	1100	22.07	0.13	—	—	—
			gas	1600	24.83	−2.68	−26.61	1.11	—
			gas	3135	2.33	6.53	530.95	−0.14	—
Fe_2B	51.7	102.5	tetrag	298	78.87	14.14	−14.64	—	—
FeB	31.0	72.8	orth	298	49.96	10.00	−10.59	—	—
			liq	1863	89.96	—	—	—	62.6
$FeBr_2$	140.6 ± 2.5	248.9 ± 1.7	hex	298	73.60	22.26	—	—	—
			cubic	650	92.05	—	—	—	0.4
			liq	964	106.69	—	—	—	51.9
$FeBr_2$(g)	337.2	41.4	gas	298	59.87	3.14	—	—	—
Fe_3C	104.6 ± 4.2	−25.1 ± 4.2	cement	298	82.01	83.68	—	—	—
				480	107.32	12.55	—	—	0.8
$FeCl_2$	76.1 ± 2.5	341.8 ± 0.8	hex	298	79.24	8.70	−4.77	—	—
			liq	950	102.17	—	—	—	43.0
$FeCl_2$(g)	299.2 ± 4.2	141.0 ± 2.1	gas	298	59.50	3.31	−2.59	—	—
Fe_2Cl_4(g)	464.4 ± 12.6	431.4 ± 4.2	gas	298	130.21	3.26	−4.73	—	—
$FeCl_3$	142.3 ± 1.7	399.4 ± 1.0	hex	298	62.34	115.06	—	—	—
			liq	580	133.89	—	—	—	43.1
$FeCl_3$(g)	344.1	253.6 ± 4.2	gas	298	82.97	0.08	−4.73	—	—
Fe_2Cl_6(g)	537.0	654.8 ± 8.4	gas	298	182.67	0.13	−8.08	—	—
FeF_2	87.0 ± 0.4	707.1 ± 8.4	tetrag	298	74.64	8.03	−8.16	—	—
			liq	1373	98.32	—	—	—	51.9

TABLE I—*continued*

Substance	$S_{298} \pm \delta S$ (J/deg mol)	$-\Delta H_{298} \pm \delta H$ (kJ/mol)	Phase	T K	$C_p = A + BT + C/T^2 + DT^2$				H_t (kJ/mol)
					A	$B \times 10^3$ (J/deg mol)	$C \times 10^{-5}$ (J/deg mol)	$D \times 10^6$ (J/deg mol)	
Fe_4N	155.6± 7.5	11.1± 4.2	cubic	298	110.79	34.14	—	—	—
$Fe_{0.945}O$	60.1± 0.8	263.0± 2.5	cubic	298	48.79	8.37	−2.80	—	—
Fe_2O_3	87.4± 1.3	823.4± 3.3	hemat	298	98.28	77.82	−14.85	—	—
				950	150.60	—	—	—	—
				1050	132.67	7.36	—	—	—
Fe_3O_4	150.9± 1.7	1108.8± 4.2	magnet	298	91.55	202.00	—	—	—
				900	213.40	—	—	—	—
$FeAl_2O_4$	106.3± 0.8	1966.5± 2.5	cubic	298	155.31	26.15	−35.23	—	—
$FeCO_3$	92.9± 2.5	740.6± 3.3	sider	298	48.66	112.09	—	—	—
$Fe(CO)_5(g)$	445.2± 3.3	723.8± 8.4	gas	298	72.22	39.33	−37.24	—	—
FeOCl	76.6± 6.3	408.4± 8.4	rhomb	298	69.04	26.82	—	—	—
$FeCr_2O_4$	146.9± 1.7	1446.4± 5.0	spinel	298	163.01	22.34	−31.92	—	—
FeOOH	60.4± 0.8	558.1± 2.9	orth	298	49.37	83.68	—	—	—
$FeCl_2.2H_2O$	165.1	956.5± 6.3	monocl	298	217.57	—	—	—	—
$FeCl_2.4H_2O$	245.6	1552.3± 8.4	monocl	298	301.25	—	—	—	—
Fe_3Mo_2	146.4± 8.4	4.2± 8.4	homb	298	101.67	49.41	6.07	—	—
$FeMoO_4$	129.3± 1.7	1060.2±12.1	monocl	298	125.52	33.47	−15.90	—	—
Fe_3P	101.6	164.0	tetrag	298	117.15	12.97	−17.78	—	—
Fe_2P	72.4	160.2	hex	298	76.78	17.03	−6.07	—	—
$FePO_4.2H_2O$	171.3± 1.3	1887.8± 9.2	streng	298	180.54	—	—	—	—
FeS	60.3± 0.4	100.4± 1.7	hex	298	−0.50	170.71	—	—	2.4
				411	72.80	—	—	—	0.5
				598	51.04	9.96	—	—	32.3
			liq	1461	71.13	—	—	—	—
FeS_2	52.9± 0.4	171.5± 2.1	pyrite	298	68.95	14.10	−9.87	—	—
$FeSO_4$	107.5± 1.3	927.6±10.5	orth	298	122.01	37.82	−29.29	—	—
$Fe_2(SO_4)_3$	282.8± 2.1	2580.3± 5.0	hex	298	309.62	111.59	−64.22	—	—
$FeSe_{0.96}$	69.2± 4.2	66.9± 4.2	tetrag	298	54.31	21.13	−5.19	—	9.6
			hex	731	67.86	−12.07	—	—	—
$Fe_2(SeO_3)_3$	272.4±18.8	1706.2±14.6	cryst	298	226.98	123.43	−31.17	—	—
FeSi	37.7± 3.3	79.5± 3.3	cubic	298	44.56	15.15	−1.13	—	—
Fe_2SiO_4	145.2± 1.7	1471.1± 7.9	fayal	298	152.76	39.16	−28.03	—	—
			liq	1490	240.58	—	—	—	92.0

FeTi	52.7± 8.8	40.6± 1.7	cubic	298	53.01	9.62	−8.12	—	—
Fe_2Ti	74.5	87.4	hex	298	80.96	13.81	−13.18	—	—
Fe_2TiO_4	173.2	1501.2±11.7	spinel	298	139.49	63.09	−14.23	—	—
$FeTiO_3$	105.9± 1.3	1237.6± 5.9	trigon	298	116.61	18.24	−20.04	—	—
			liq	1740	199.16	—	—	—	90.8
$FeWO_4$	131.6± 1.3	1182.8± 5.4	monocl	298	132.42	29.75	−23.93	—	—
Ga	40.8	0.0	orth	298	26.78	—	—	—	—
			liq	303	26.78	—	—	—	5.6
Ga(g)	168.9	−272.0	gas	298	31.76	−9.62	−3.05	2.18	—
GaAs	64.2± 0.4	74.1± 6.3	cubic	298	45.19	6.07	—	—	—
			liq	1511	58.99	—	—	—	87.9
$GaBr_3$	179.9±11.7	386.6± 2.5	cryst	298	78.58	77.40	—	—	—
			liq	396	125.52	—	—	—	11.7
GaCl(g)	240.0± 0.2	81.8±15.1	gas	298	37.99	—	−2.01	—	—
$GaCl_3$	135.1±13.8	524.7± 4.6	cryst	298	118.41	—	—	—	—
			liq	351	128.03	—	—	—	11.5
GaI_3	203.8±16.7	239.3±12.1	orth	298	117.15	—	—	—	—
			liq	486	128.45	—	—	—	22.2
GaN	29.7± 7.5	109.6± 9.2	hex	298	38.07	9.00	—	—	—
Ga_2O_3	84.9± 0.4	1089.1± 4.6	monocl	298	112.55	15.48	−21.67	—	—
GaP	52.3± 0.8	102.5± 8.4	cubic	298	41.84	6.82	—	—	—
$Ga_2S(g)$	290.0± 8.4	−20.9±33.5	gas	298	56.00	1.15	−9.25	—	—
GaS	57.7± 6.3	209.2±18.8	hex	298	41.34	15.69	—	—	—
Ga_2S_3	142.3±16.7	516.3±12.6	cubic	298	90.50	47.28	—	—	—
GaSb	76.1± 0.8	43.9± 1.7	cubic	298	44.35	14.23	—	—	—
GaSe	70.3± 2.1	159.0±12.6	hex	298	44.64	12.97	—	—	—
Ga_2Se_3	179.9±16.7	408.8±12.6	cubic	298	105.73	35.31	—	—	—
GaTe	85.4	125.5±12.6	monocl	298	45.27	13.97	—	—	—
Ga_2Te_3	213.4±16.7	274.9±16.7	cubic	298	95.06	18.62	—	—	—
Gd	67.9	0.0	hcp	298	6.69	32.64	18.41	−8.37	—
			bcc	1533	28.45	—	—	—	3.9
			liq	1586	37.15	—	—	—	10.0
Gd(g)	194.2	−397.5	gas	298	30.91	−8.35	−0.95	2.15	—
			gas	1000	23.73	−4.00	23.20	2.55	—
			gas	2000	7.26	10.66	67.98	−0.94	—
$GdBr_3$	190.0	828.9	hex	298	101.96	5.77	−5.98	—	—
			liq	1058	139.33	—	—	—	38.2
$GdCl_3$	151.5± 2.5	1008.3± 3.3	orth	298	93.09	25.10	−2.47	—	—
			liq	875	139.33	—	—	—	40.7
GdF_3	114.8± 1.3	1699.1± 4.6	orth	298	102.01	6.49	−13.81	—	—
			hex	1348	130.83	—	—	—	6.0
			liq	1505	127.82	—	—	—	52.4

TABLE I—*continued*

Substance	$S_{298} \pm \delta S$ (J/deg mol)	$-\Delta H_{298} \pm \delta H$ (kJ/mol)	Phase	T K	$C_p = A + BT + C/T^2 + DT^2$ A	$B \times 10^3$ (J/deg mol)	$C \times 10^{-5}$ (J/deg mol)	$D \times 10^6$ (J/deg mol)	H_t (kJ/mol)
GdI_3	226.4	594.1	hex	298	106.61	0.88	−7.32	—	—
			β	1013	127.82	—	—	—	0.9
			liq	1204	155.85	—	—	—	54.0
Gd_2O_3	150.6 ± 0.4	1826.7 ± 3.3	cubic	298	119.20	12.95	−15.82	—	—
			monocl	1550	114.50	14.47	−10.84	—	1.7
GdOCl	95.4 ± 9.2	983.7 ± 3.8	tetrag	298	66.94	16.40	—	—	—
Ge	31.1	0.0	cubic	298	21.55	5.86	—	—	—
			liq	1210	27.61	—	—	—	36.9
Ge(g)	167.8	−372.0	gas	298	39.90	−15.95	−3.93	—	—
$GeBr_4$(g)	396.2 ± 1.7	298.7 ± 9.2	gas	298	107.36	0.67	−5.10	—	—
$GeCl_4$(g)	347.7 ± 1.3	494.8 ± 10.5	gas	298	106.86	0.92	−10.00	—	—
GeF_4(g)	301.8 ± 1.0	1190.2 ± 0.8	gas	298	97.61	8.37	−16.36	—	—
GeH_4(g)	217.1 ± 0.8	−90.8 ± 2.1	gas	298	62.55	22.09	−21.63	—	—
GeI_4(g)	428.9 ± 2.1	37.7 ± 10.5	gas	298	109.20	1.00	−4.60	—	—
GeO(g)	223.8 ± 0.4	30.7	gas	298	37.03	—	−5.65	—	—
GeO_2	39.7 ± 1.3	580.0 ± 1.5	tetrag	298	66.61	11.59	−17.74	—	—
			hex	1322	68.91	9.83	−17.70	—	21.1
GeP	61.1 ± 8.4	27.2 ± 10.5	cryst	298	45.40	11.30	−5.23	—	—
GeS	66.0 ± 0.8	76.1 ± 4.6	orth	298	41.80	20.13	—	—	—
			liq	938	60.67	—	—	—	20.9
GeS(g)	235.6 ± 0.4	−99.4 ± 5.9	gas	298	36.74	0.42	−2.85	—	—
GeS_2	87.4 ± 2.1	156.9 ± 12.6	orth	298	56.44	31.05	—	—	—
GeSe	78.2 ± 0.8	69.0 ± 10.5	orth	298	45.10	16.40	—	—	—
GeSe(g)	247.7 ± 2.1	−105.4 ± 18.8	gas	298	36.99	0.17	−1.76	—	—
$GeSe_2$	112.5 ± 3.3	113.0 ± 20.9	hex	298	62.89	27.74	—	—	—
GeTe	88.9 ± 1.0	48.5 ± 10.5	trig	298	48.12	12.55	—	—	—
			liq	997	60.67	—	—	—	46.9
GeTe(g)	255.6 ± 1.7	−145.6 ± 16.7	gas	298	37.36	—	−1.26	—	—
H(g)	114.6 ± 0.0	−218.0 ± 0.0	gas	298	20.79	—	—	—	—
H_2(g)	130.6 ± 0.0	0.0	gas	298	27.37	3.33	—	—	—
HBr(g)	198.6	36.3	gas	298	25.10	8.45	1.42	−1.46	—
HCl(g)	186.8	92.3	gas	298	24.80	7.99	1.88	−1.30	—
HF(g)	173.7 ± 0.0	273.3 ± 0.6	gas	298	26.90	3.43	1.09	—	—
HI(g)	206.5 ± 0.2	−26.4 ± 0.8	gas	298	25.90	8.49	0.66	−1.54	—
HCN(g)	201.7 ± 0.2	−135.1 ± 8.4	gas	298	46.28	5.02	−10.67	—	—

H_2O(l)	69.9	285.8	liq	298	75.44	—	—	—	—
H_2O(g)	188.7	241.8	gas	298	30.00	10.71	0.33	—	—
H_2O_2(l)	109.5 ± 0.5	187.8 ± 0.4	liq	298	89.33	—	—	—	—
H_2O_2(g)	232.9 ± 0.6	136.4 ± 0.8	gas	298	52.30	11.88	−11.88	—	—
HBO_2	49.0 ± 6.3	803.3 ± 1.3	cubic	298	52.09	34.48	6.95	—	—
HBO_2(g)	240.2 ± 1.7	564.0 ± 7.5	gas	298	51.76	12.01	−11.72	—	—
H_3BO_3	90.0 ± 0.8	1094.8 ± 1.3	tricli	298	81.38	—	—	—	—
H_3BO_3(g)	303.3 ± 2.5	1012.5 ± 20.9	gas	298	77.40	—	—	—	—
HOF(g)	226.6 ± 0.2	98.3 ± 4.2	gas	298	41.59	6.55	−6.80	—	—
HNO_3(g)	266.5	134.7	gas	298	66.11	32.05	−20.50	−6.86	—
HCNO(g)	238.1 ± 0.4	101.7 ± 8.4	gas	298	57.28	10.63	−13.81	—	—
H_3PO_4	110.5 ± 0.4	1266.9 ± 2.5	monocl	298	106.61	—	—	—	—
			liq	315	55.23	301.25	—	—	13.4
H_2S(g)	205.6 ± 0.4	20.5 ± 0.8	gas	298	28.54	20.61	−0.37	−3.70	—
H_2S_2(l)	200.8 ± 12.6	18.0 ± 0.8	liq	298	92.26	—	—	—	—
H_2S_2(g)	266.4	−15.7 ± 0.8	gas	298	51.38	16.19	−4.18	—	—
H_2SO_4(l)	156.9 ± 0.2	814.0 ± 0.8	liq	298	58.16	193.72	—	—	—
H_2SO_4(g)	298.7 ± 2.1	735.1 ± 8.4	gas	298	126.23	10.43	−43.46	—	—
H_2Se(g)	218.8 ± 0.4	−29.3 ± 1.3	gas	298	31.76	14.64	−1.30	—	—
H_2Te(g)	228.9 ± 2.1	−99.6 ± 1.3	gas	298	35.48	12.05	−3.10	—	—
Hf	43.5	0.0	hex	298	23.44	7.63	—	—	—
			bcc	2016	10.29	10.77	—	—	5.9
			liq	2504	33.47	—	—	—	27.2
Hf(g)	186.8	−620.1	gas	298	13.24	15.78	2.85	−3.47	—
			gas	2500	16.23	3.90	315.93	—	—
HfB_2	42.9 ± 0.4	328.9 ± 8.8	hex	298	73.35	7.82	−23.01	—	—
$HfBr_4$	240.6 ± 12.6	766.1 ± 2.1	cubic	298	108.70	63.43	—	—	—
$HfBr_4$(g)	427.6 ± 12.6	656.9 ± 16.7	gas	298	108.99	0.13	−4.85	—	—
HfC	39.5 ± 0.4	225.9 ± 6.3	cubic	298	42.34	12.13	−7.36	−2.43	—
$HfCl_4$	190.8 ± 2.5	990.4 ± 2.1	cubic	298	131.67	—	−9.96	—	—
$HfCl_4$(g)	377.2 ± 6.3	882.8 ± 6.3	gas	298	108.44	0.21	−8.54	—	—
HfF_4	113.0 ± 10.5	1930.5 ± 3.8	tetrag	298	133.47	3.14	−37.66	—	—
HfF_4(g)	327.6 ± 12.6	1694.5 ± 20.9	gas	298	120.25	—	−27.61	—	—
HfI_4	269.9 ± 12.6	493.7 ± 20.9	cubic	298	135.02	31.21	—	—	—
HfN	45.2 ± 1.3	373.6 ± 2.5	cubic	298	45.77	9.32	−6.69	—	—
HfO_2	59.4 ± 0.4	1117.5 ± 1.7	monocl	298	72.11	9.05	−12.94	—	—
			tetrag	1973	108.78	—	—	—	9.3
Hg	75.9	0.0	liq	298	30.38	−11.46	—	10.15	—
Hg(g)	174.8	−61.4	gas	298	27.66	—	—	—	—
HgBr	109.4	102.1	tetr	298	49.75	11.76	—	—	—
$HgBr_2$	170.3	169.5 ± 1.3	orth	298	66.59	29.29	—	—	—
			liq	428	102.09	—	—	—	17.9

TABLE I—*continued*

Substance	$S_{298} \pm \delta S$ (J/deg mol)	$-\Delta H_{298} \pm \delta H$ (kJ/mol)	Phase	T K	$C_p = A + BT + C/T^2 + DT^2$				H_t (kJ/mol)
					A	$B \times 10^3$ (J/deg mol)	$C \times 10^{-5}$ (J/deg mol)	$D \times 10^6$ (J/deg mol)	
HgCl	95.8 ± 0.8	132.6 ± 0.8	tetrag	298	49.37	11.51	−1.80	—	—
$HgCl_2$	144.5 ± 0.4	230.1 ± 2.3	orth	298	70.00	20.29	−1.88	—	—
			liq	550	102.09	—	—	—	19.2
$HgCl_2$(g)	288.7 ± 1.7	149.0 ± 2.7	gas	298	62.13	0.13	−3.64	—	—
HgF	80.3 ± 8.4	242.7 ± 10.5	tetrag	298	50.00	10.92	−2.76	—	—
HgF_2	116.3	422.6	cubic	298	68.62	20.92	—	—	—
			liq	918	102.09	—	—	—	23.0
HgI	120.6	59.5 ± 0.8	tetrag	298	53.26	9.25	−2.76	—	—
			liq	563	68.20	—	—	—	13.6
HgI_2	170.7	105.4 ± 1.7	tetrag	298	77.40	—	—	—	—
			orth	403	84.52	—	—	—	2.7
			liq	525	104.60	—	—	—	18.8
HgO	70.2 ± 0.4	90.8 ± 0.8	orth	298	35.56	30.12	—	—	—
HgS	82.4 ± 2.1	53.3 ± 4.2	hex	298	43.76	15.56	—	—	—
			cubic	618	44.02	15.19	—	—	4.0
Hg_2SO_4	200.7 ± 0.4	743.1 ± 10.5	monocl	298	133.05	—	—	—	—
$HgSO_4$	140.2	704.2 ± 10.5	orth	298	58.58	146.44	—	—	—
HgSe	100.8 ± 3.3	43.5	cubic	298	48.95	15.48	—	—	—
$HgSeO_3$	162.3	365.3	cryst	298	83.68	61.92	—	—	—
HgTe	111.5 ± 1.7	32.2 ± 5.0	cubic	298	52.09	9.08	—	—	—
Ho	75.0	0.0	hcp	298	35.46	−22.07	−2.96	18.83	—
			bcc	1713	28.03	—	—	—	4.7
			liq	1745	43.93	—	—	—	12.1
Ho(g)	195.5	−300.8	gas	298	20.79	—	—	—	—
			gas	500	22.05	−2.95	−0.67	1.95	—
			gas	1500	7.88	9.72	54.75	−1.30	—
$HoCl_3$	147.7 ± 14.6	1006.3 ± 2.9	monocl	298	95.56	12.97	−0.96	—	—
			liq	993	148.66	—	—	—	30.5
HoF_3	110.9 ± 12.6	1714.2 ± 6.3	orth	298	106.86	0.50	−21.09	—	—
			orth	1343	163.34	−16.44	−239.07	—	—
			liq	1416	96.02	—	—	—	56.3
Ho_2O_3	158.2 ± 0.4	1881.1 ± 5.4	cubic	298	125.85	6.95	−11.51	—	—
I_2	116.1	0.0	orth	298	−50.65	246.91	27.97	—	—
			liq	387	80.67	—	—	—	15.8

I_2(g)	260.6	−62.4	gas	298	37.40	0.57	−0.62	—	—
I(g)	180.7	−106.8	gas	298	20.39	0.40	0.28	—	—
In	57.8	0.0		298	24.31	10.46	—	—	—
			liq	430	30.29	−1.38	—	—	3.3
In(g)	173.7	−240.4	gas	298	13.10	17.24	2.55	−2.97	—
				800	36.40	−5.23	−44.39	—	—
				1500	33.01	−5.15	—	0.59	—
				1900	23.81	—	85.23	−0.21	—
InAs	75.7± 0.8	57.7± 3.3	cubic	298	47.07	7.53	—	—	—
			liq	1215	59.83	—	—	—	77.0
InBr	112.1± 4.2	20.5± 8.4	orth	298	43.51	25.10	—	—	—
			liq	558	60.67	—	—	—	24.3
InBr(g)	259.5± 0.2	37.2	gas	298	37.57	0.42	−0.73	—	—
$InBr_3$	175.7±12.6	410.9± 8.4	cryst	298	82.01	54.39	—	—	—
InCl	95.0± 6.3	186.2± 8.4	cubic	298	35.15	41.84	—	—	—
			β	393	58.58	—	—	—	6.9
			liq	498	62.76	—	—	—	9.2
$InCl_2$	122.2± 6.3	362.8±16.7	orth	298	58.58	50.21	—	—	—
$InCl_3$	141.0± 8.4	537.2± 8.4	monocl	298	78.66	55.65	—	—	—
InI	123.8± 6.3	115.9± 8.4	orth	298	48.12	12.55	—	—	—
			liq	638	60.67	—	—	—	22.4
InI_3	203.3±10.5	234.7± 8.4	monocl	298	164.01	—	—	—	—
			liq	480	135.98	—	—	—	20.1
InN	43.5± 5.9	138.1±10.0	hex	298	38.07	12.13	—	—	—
In_2O_3	107.9± 3.3	925.9± 1.7	cubic	298	121.34	13.39	−30.12	—	—
InP	59.7± 0.4	75.3± 8.4	cubic	298	41.00	14.64	—	—	—
			β	910	55.23	—	—	—	0.4
			liq	1328	58.58	—	—	—	62.8
InS	71.0± 0.8	133.9±10.5	orth	298	42.51	18.83	—	—	—
			liq	965	60.67	—	—	—	36.0
In_2S_3	163.6± 2.5	355.6±20.9	cubic	298	128.95	3.26	−10.63	—	—
			tetrag	660	97.78	55.40	—	—	1.1
			gamma	1100	159.41	—	—	—	4.0
$In_2(SO_4)_3$	302.1± 2.1	2725.5± 3.3	hex	298	200.20	251.04	—	—	—
InSb	87.1± 0.8	30.5± 0.8	cubic	298	44.77	15.06	—	—	—
			liq	798	61.92	—	—	—	47.7
InSe	81.6± 4.2	118.0±12.6	rhomb	298	45.44	16.32	—	—	—
In_2Se_3	201.3±16.7	326.4±16.7	hex	298	59.91	270.50	—	—	—
			hex	470	165.27	—	—	—	1.4
In_2Te	156.9±10.5	79.9± 2.5	orth	298	56.48	36.82	—	—	—
InTe	105.7± 1.7	72.0± 1.7	tetrag	298	41.97	19.37	—	—	—
			liq	965	60.67	—	—	—	3.7

TABLE I—*continued*

Substance	$S_{298} \pm \delta S$ (J/deg mol)	$-\Delta H_{298} \pm \delta H$ (kJ/mol)	Phase	T K	$C_p = A + BT + C/T^2 + DT^2$				H_t (kJ/mol)
					A	$B \times 10^3$ (J/deg mol)	$C \times 10^{-5}$ (J/deg mol)	$D \times 10^6$ (J/deg mol)	
In_2Te_3	234.3 ± 16.7	191.6 ± 4.2	cubic	298	110.88	41.84	—	—	—
			cubic	890	148.53	—	—	—	2.0
			liq	944	154.81	—	—	—	81.6
Ir	35.5	0.0	fcc	298	22.89	7.03	—	—	—
			liq	2720	41.84	—	—	—	26.1
Ir(g)	193.5	−669.4	gas	298	15.42	9.56	2.48	−1.54	—
$IrCl_3$	114.6	245.2	cryst	298	84.94	18.83	−4.18	—	—
IrF_6(g)	357.7 ± 1.7	543.9 ± 83.7	gas	298	120.92	—	—	—	—
IrO_2	51.0	249.4	tetrag	298	61.88	20.42	−10.96	—	—
Ir_2S_3	51.0	249.4	orth	298	110.29	32.97	−9.62	—	—
IrS_2	69.0	133.1	orth	298	68.58	15.77	−6.57	—	—
K	64.7	0.0	bcc	298	25.27	13.05	—	—	—
			liq	337	37.18	−19.12	—	12.30	2.4
K(g)	160.2	−89.0	gas	298	20.79	—	—	—	—
K_2(g)	249.6	−127.1	gas	298	37.41	2.06	−0.12	—	—
KBr	95.9 ± 0.4	393.6 ± 0.4	cubic	298	69.16	−45.56	−6.49	45.02	—
			liq	1007	69.87	—	—	—	25.5
KBr(g)	250.4 ± 0.2	179.9 ± 2.1	gas	298	37.40	0.86	−0.61	—	—
KCl	82.6 ± 0.2	436.6 ± 0.4	cubic	298	40.02	25.47	3.64	—	—
			liq	1045	73.60	—	—	—	26.3
KCl(g)	239.0 ± 0.2	214.6	gas	298	37.15	0.96	−0.84	—	—
$KCaCl_3$	196.6	1244.3	orth	298	137.28	4.03	−5.15	—	—
				600	123.60	−80.75	—	80.75	—
			liq	1014	178.66	—	—	—	41.8
KF	66.5 ± 0.4	566.1 ± 1.7	cubic	298	47.36	13.26	−1.97	—	—
			liq	1131	66.94	—	—	—	29.3
KF(g)	226.5 ± 0.2	324.3 ± 5.0	gas	298	37.24	0.75	−2.05	—	—
K_3AlF_6	284.5 ± 12.6	3326.3 ± 13.8	tetrag	298	238.61	41.00	−25.94	—	—
KBF_4	133.9	1884.1 ± 2.1	orth	298	65.35	162.59	0.73	—	—
			cubic	556	146.23	—	—	—	13.8
			liq	843	167.15	—	—	—	18.0
KH	51.5 ± 6.3	57.8 ± 0.2	cubic	298	37.80	26.78	−6.99	—	—
KH(g)	197.9 ± 0.2	−123.0 ± 3.3	gas	298	35.33	1.99	−4.60	—	—

KHF_2	104.3 ± 0.4	930.9 ± 1.3	tetrag	298	50.21	89.54	—	—	—
			cubic	470	100.25	—	—	—	12.0
			liq	512	104.60	—	—	—	6.6
KI	106.3 ± 0.4	327.8	cubic	298	38.83	28.91	4.94	—	—
			liq	954	72.38	—	—	—	24.0
KI(g)	258.2 ± 0.2	125.5 ± 2.1	gas	298	37.40	0.88	−0.42	—	—
KCN	127.8 ± 1.7	113.4	cubic	298	66.27	0.42	—	—	—
			liq	895	75.31	—	—	—	14.6
K_2O	94.1	363.2 ± 2.9	cubic	298	95.65	−4.94	−11.05	23.68	—
K_2O_2	113.0	495.0	rhomb	298	79.75	69.08	—	—	—
KO_2	122.6 ± 4.2	284.5 ± 2.5	tetrag	298	87.65	10.67	−11.97	—	—
KBO_2	80.0 ± 0.4	995.0 ± 8.4	hex	298	80.96	23.43	−18.66	—	—
			liq	1220	146.44	—	—	—	31.4
$K_2B_4O_7$	208.4 ± 6.3	3326.3 ± 12.6	cryst	298	138.57	279.57	−35.48	−131.75	—
			liq	1089	380.53	77.19	—	—	104.2
K_2CO_3	155.5 ± 0.4	1153.1 ± 4.2	monocl	298	97.95	92.09	−9.87	—	—
			liq	1173	209.20	—	—	—	27.9
$KClO_3$	143.1 ± 1.3	389.1 ± 2.9	monocl	298	97.49	60.67	−13.39	—	—
$KClO_4$	151.0 ± 1.3	427.2 ± 5.0	rhomb	298	138.49	62.76	−39.75	—	—
			cubic	574	138.49	62.76	−39.75	—	13.8
K_2CrO_4	200.2 ± 2.9	1390.3 ± 4.2	orth	298	123.72	74.89	—	—	—
			hex	939	148.53	50.21	—	—	10.0
			liq	1250	209.20	—	—	—	31.8
$KFeO_2$	87.9 ± 9.6	1238.5 ± 12.6	cryst	298	100.00	23.85	−11.72	—	—
KOH	78.9 ± 0.8	424.7 ± 1.3	monocl	298	43.30	72.59	—	—	—
			cubic	516	78.66	—	—	—	6.4
			liq	679	83.09	—	—	—	8.6
KOH(g)	236.3 ± 1.3	232.6 ± 10.5	gas	298	50.84	4.29	−3.18	—	—
KNO_3	132.8 ± 0.8	494.5 ± 1.7	rhomb	298	60.46	118.83	—	—	—
			hex	402	120.50	—	—	—	5.1
			liq	607	123.43	—	—	—	9.7
K_3PO_4	211.7 ± 6.3	1988.2 ± 7.5	cubic	298	164.85	—	—	—	—
K_2HPO_4	179.1 ± 1.3	1775.7 ± 2.9	cryst	298	164.56	41.46	−29.71	—	—
KH_2PO_4	134.9 ± 0.8	1568.0 ± 2.5	tetrag	298	144.52	38.95	−35.15	—	—
K_2S	115.1 ± 14.6	376.6 ± 12.6	cubic	298	66.94	25.94	—	—	—
			cubic	1050	142.34	—	—	—	10.5
			liq	1221	100.96	—	—	—	16.2
K_2SO_4	175.6 ± 1.0	1438.5 ± 1.3	orth	298	142.38	10.75	−19.08	80.75	—
			hex	857	114.06	81.59	—	—	8.6
			liq	1342	200.00	—	—	—	34.7

TABLE I—*continued*

Substance	$S_{298} \pm \delta S$ (J/deg mol)	$-\Delta H_{298} \pm \delta H$ (kJ/mol)	Phase	T K	$C_p = A + BT + C/T^2 + DT^2$				H_t (kJ/mol)
					A	$B \times 10^3$ (J/deg mol)	$C \times 10^{-5}$ (J/deg mol)	$D \times 10^6$ (J/deg mol)	
$K_2Si_2O_5$	190.6± 0.4	2508.7± 8.4	monocl	298	191.84	36.57	−37.15	—	—
			β	510	157.99	90.83	−9.96	—	1.3
			gamma	867	224.22	4.44	—	—	1.6
			liq	1318	275.31	—	—	—	35.2
K_2SiO_3	146.1± 0.8	1589.9± 6.3	orth	298	118.91	48.79	−14.14	—	—
			liq	1249	167.36	—	—	—	50.2
$K_2Si_4O_9$	265.7±12.6	4315.8±15.1	tricli	298	253.22	159.37	—	—	—
			β	865	391.37	16.19	—	—	3.3
			liq	1043	410.03	—	—	—	87.9
$KAl(SO_4)_2$	204.6± 1.3	2470.2± 3.3	hex	298	234.14	82.34	−58.41	—	—
$K_2O.Al_2O_3.2SiO_2$	266.1	4217.1	kaliop	298	239.58	—	—	—	—
$K_2O.Al_2O_3.4SiO_2$	368.2	6068.9	leucit	298	244.60	—	—	—	—
$K_2O.Al_2O_3.6SiO_2$	439.3	7914.0	microc	298	572.12	77.32	−190.46	—	—
$K_2O.Al_2O_3.6SiO_2$(a)	468.6	7908.2	andula	298	572.12	77.32	−190.46	—	—
$K_2O.Al_2O_3.6SiO_2$(s)	476.1	7903.2	sanidi	298	572.12	77.32	−190.46	—	—
K_2WO_4	175.7±20.9	1581.6	monocl	298	113.39	125.52	—	—	—
			hex	650	194.56	—	—	—	10.5
			liq	1196	213.38	—	—	—	31.0
La	56.9	0.0	hex	298	26.44	2.33	—	—	—
			fcc	583	17.66	15.02	3.89	—	0.4
			bcc	1138	39.54	—	—	—	3.1
			liq	1191	34.31	—	—	—	6.2
La(g)	182.3	−430.0	gas	298	18.91	16.48	—	−5.15	—
				1400	32.51	—	−12.05	—	—
				1800	28.28	—	71.42	0.50	—
$LaAl_2$	98.7± 0.4	151.0±33.5	cubic	298	69.45	14.23	—	—	—
$LaBr_3$	182.0	844.7± 1.7	hex	298	94.73	25.10	—	—	—
			liq	1062	144.35	—	—	—	54.0
$LaCl_3$	137.7± 0.8	1070.7± 1.3	hex	298	86.19	39.75	—	—	—
			liq	1131	125.52	—	—	—	54.4
$LaCl_3$(g)	364.4± 6.7	740.6± 6.7	gas	298	80.75	0.25	−2.93	—	—
LaF_3	113.4	1731.8± 5.0	hex	298	48.95	59.58	29.12	—	—
			liq	1766	152.72	—	—	—	50.2
LaF_3(g)	327.6± 2.9	1287.8	gas	298	82.68	—	−8.87	—	—
LaH_2	51.7± 0.4	201.3± 5.4	cubic	298	39.25	15.15	—	—	—

LaI_3	214.6	656.9 ± 10.5	cryst	298	97.15	19.81	−2.73	—	—
			liq	1062	151.75	—	—	—	56.1
LaN	60.5 ± 0.8	299.2 ± 16.7	cubic	298	45.52	7.28	—	—	—
La_2O_3	127.3 ± 0.4	1794.9 ± 2.9	cubic	298	120.71	12.89	−13.72	—	—
$LaAlO_3$	85.4 ± 10.5	1793.9 ± 3.3	orth	298	111.80	15.48	−21.13	—	—
				623	111.80	15.48	−21.13	—	0.1
				800	111.80	15.48	−21.13	—	0.3
LaOCl	82.8 ± 10.5	1018.8 ± 9.2	tetrag	298	70.50	12.26	−4.60	—	—
$La_3(MoO_4)_3$	389.9 ± 5.4	4323.7 ± 11.7	monocl	298	329.36	—	—	—	—
$LaPO_4$	121.3 ± 12.6	1912.5 ± 10.5	monocl	298	125.52	24.89	−27.82	—	—
La_2S_3	165.0 ± 0.8	1184.1 ± 12.6	rhomb	298	116.52	14.64	—	—	—
LaS	73.2	472.4 ± 5.0	cubic	298	46.48	5.44	—	—	—
LaS(g)	252.5 ± 0.4	−129.7	gas	298	37.07	0.17	−2.38	—	—
La_2Se_3	202.2 ± 0.8	933.0 ± 33.5	cubic	298	120.71	16.32	—	—	—
LaSe	81.2 ± 5.0	405.0	cubic	298	47.45	5.86	—	—	—
La_2Te_3	231.7 ± 0.8	784.5 ± 25.5	cubic	298	128.16	13.39	—	—	—
Li	29.1	0.0	bcc	298	1.30	56.27	6.02	—	—
			liq	454	31.21	−5.27	2.05	2.64	3.0
Li(g)	138.7	−159.3	gas	298	20.79	—	—	—	—
			gas	1700	22.64	−2.09	—	0.59	—
$Li_2(g)$	196.9	−211.3	gas	298	37.03	1.72	−1.34	0.59	—
			gas	1200	51.13	−4.94	−77.61	—	—
			gas	2000	61.09	−18.16	—	3.64	—
LiBr	74.1 ± 0.4	351.0 ± 1.0	cubic	298	30.25	41.38	7.20	—	—
			liq	823	65.27	—	—	—	17.7
LiBr(g)	224.3 ± 0.2	156.9 ± 2.5	gas	298	37.03	0.84	−3.01	—	—
Li_2C_2	58.6 ± 4.2	59.4 ± 8.4	cryst	298	101.84	10.21	−29.62	—	—
LiCl	59.3 ± 0.4	408.4 ± 0.4	cubic	298	41.42	23.39	—	—	—
			liq	883	73.39	−9.46	—	—	19.7
LiCl(g)	212.8 ± 0.4	195.4 ± 1.7	gas	298	36.80	0.89	−3.49	—	—
LiF	35.6 ± 0.2	615.0 ± 1.3	cubic	298	42.68	17.41	−5.31	—	—
			liq	1122	64.18	—	—	—	27.1
LiF(g)	200.2 ± 0.2	338.9 ± 1.3	gas	298	35.65	1.31	−4.27	—	—
$Li_2F_2(g)$	261.5	936.4	gas	298	81.59	2.26	−16.23	−0.54	—
$Li_3F_3(g)$	316.7	1404.2	gas	298	126.19	6.69	−22.93	−1.67	—
Li_3AlF_6	187.9 ± 0.4	3376.5 ± 5.9	rhomb	298	205.94	109.83	−32.30	—	—
			tetrag	748	284.51	—	—	—	2.1
			cubic	848	294.97	—	—	—	1.3
			eps	978	305.43	—	—	—	0.4
			liq	1057	359.82	—	—	—	86.2
Li_2BeF_4	130.5 ± 2.5	2272.7 ± 4.6	hex	298	92.05	147.95	−1.00	—	—
			liq	732	232.21	—	—	—	43.9

TABLE I—*continued*

Substance	$S_{298} \pm \delta S$ (J/deg mol)	$-\Delta H_{298} \pm \delta H$ (kJ/mol)	Phase	T K	$C_p = A + BT + C/T^2 + DT^2$				H_t (kJ/mol)
					A	$B \times 10^3$ (J/deg mol)	$C \times 10^{-5}$ (J/deg mol)	$D \times 10^6$ (J/deg mol)	
$LiBeF_3$	89.1 ± 4.2	1650.6 ± 5.4	cryst	298	54.39	125.52	—	—	—
			liq	650	158.99	—	—	—	27.2
LiH	20.6 ± 0.4	90.7 ± 0.4	cubic	298	16.40	52.72	−2.93	—	—
			liq	964	58.58	—	—	—	22.1
LiH(g)	170.8 ± 0.4	−139.3 ± 1.7	gas	298	28.29	10.30	−1.37	−2.63	—
LiI	86.7 ± 0.4	270.3 ± 5.4	cubic	298	42.26	28.07	—	—	—
			liq	742	63.18	—	—	—	14.6
LiI(g)	232.1 ± 0.2	88.3	gas	298	37.15	0.84	−2.55	—	—
Li_3N	62.6 ± 0.4	164.8 ± 1.3	hex	298	56.53	85.77	−6.07	—	—
Li_2O	37.7 ± 0.2	597.9 ± 1.0	cubic	298	69.79	17.66	−18.49	—	—
			liq	1726	97.07	—	—	—	43.1
$Li_2O(g)$	232.6 ± 4.6	165.7 ± 5.4	gas	298	60.46	0.84	−9.33	—	—
Li_2O_2	58.2 ± 6.3	633.9 ± 8.4	hex	298	52.22	76.15	—	—	—
$LiAlO_2$	53.3 ± 1.3	1188.7 ± 4.2	hex	298	92.34	12.18	−25.02	—	—
			liq	1883	133.89	—	—	—	87.9
Li_3AsO_4	173.2 ± 8.4	1623.4 ± 10.5	orth	298	161.92	—	—	—	—
$LiBO_2$	51.7 ± 0.4	1019.2 ± 1.7	monocl	298	59.41	50.00	−12.34	—	—
			liq	1117	144.35	—	—	—	33.8
$Li_2B_4O_7$	156.9 ± 2.9	3374.4 ± 8.8	tetrag	298	83.68	302.08	13.81	−84.31	—
			liq	1193	453.55	10.46	−53.97	3.77	120.5
LiB_3O_5	96.2 ± 3.8	2335.9 ± 5.0	orth	298	155.98	44.81	−23.01	—	—
$Li_2B_8O_{13}$	263.6	5947.6 ± 20.9	orth	298	377.82	219.66	−97.49	−78.66	—
Li_2CO_3	90.2 ± 0.4	1215.5 ± 4.2	monocl	298	56.82	138.07	—	—	—
			β	623	132.38	—	—	—	—
			gamma	683	14.35	180.75	—	—	2.5
			liq	1000	185.43	—	—	—	44.8
$LiClO_4$	119.5 ± 0.4	375.3 ± 1.3	cryst	298	137.24	44.64	−40.46	—	—
			liq	520	161.08	—	—	—	17.0
$LiFeO_2$	75.3 ± 0.8	769.0 ± 5.4	cubic	298	81.17	51.67	−12.55	—	—
LiOH	42.8 ± 0.2	484.9 ± 0.4	tetrag	298	50.17	34.48	−9.50	—	—
			liq	744	87.11	—	—	—	20.9
LiOH(g)	210.5 ± 2.1	234.3 ± 6.3	gas	298	50.54	4.23	−5.02	—	—
Li_2HfO_3	96.2 ± 8.4	1774.0 ± 5.4	monocl	298	134.72	34.39	−29.41	—	—
$LiNO_3$	88.7 ± 7.5	483.2 ± 1.3	hex	298	62.68	88.70	—	—	—
			liq	526	111.29	—	—	—	25.9

$LiNbO_3$	85.4± 4.2	1365.2	hex	298	114.93	24.35	−20.33	—	—
$LiPO_3$	72.4± 2.9	1254.8± 3.8	monocl	298	58.37	94.14	—	—	—
Li_2S	60.7± 8.4	446.9± 2.1	cubic	298	66.32	20.17	—	—	—
Li_2SO_4	114.0± 0.4	1437.2± 0.8	monocl	298	65.27	174.05	—	—	—
			cubic	848	607.52	−383.25	—	—	25.5
			liq	1130	207.94	—	—	—	9.3
Li_2Se	66.5± 8.4	420.1± 8.4	cryst	298	74.81	10.29	—	—	—
Li_2SiO_3	79.9± 0.8	1648.5±10.5	orth	298	126.90	28.24	−30.25	—	—
			liq	1474	167.36	—	—	—	28.0
$Li_2O.Al_2O_3.2SiO_2$	207.5	4230.0	eucryp	298	308.57	56.90	−87.86	—	—
				1300	259.41	100.42	—	—	2.5
$Li_2O.Al_2O_3.4SiO_2$	258.6	6092.7	α−spod	298	370.95	137.57	−83.68	—	—
$Li_2O.Al_2O_3.4SiO_2(\beta)$	308.8	6036.7	β−spod	298	414.38	91.21	−103.09	—	—
$LiTaO_3$	90.0± 8.4	1419.2	hexag	298	117.78	19.54	−20.92	—	—
Li_2Te	77.4	355.6	cryst	298	77.40	16.74	—	—	—
Li_2TiO_3	91.8± 0.8	1669.8±10.5	cubic	298	143.39	13.22	−33.47	—	—
			monocl	1485	125.52	33.47	—	—	11.5
			liq	1820	200.83	—	—	—	110.0
Li_2WO_4	113.0±12.6	1603.7	hex	298	101.67	106.27	—	—	—
			cubic	948	199.16	—	—	—	2.7
			liq	1013	205.02	—	—	—	28.5
Li_2ZrO_3	91.6± 8.4	1762.3± 7.1	cryst	298	133.26	32.97	−28.20	—	—
Lu	51.0	0.0	hex	298	27.41	−5.40	0.25	8.28	—
			liq	1936	47.91	—	—	—	19.2
Lu(g)	184.7	−427.6	gas	298	12.47	20.93	2.48	−7.15	—
			gas	800	30.63	−1.59	−26.41	−0.32	—
			gas	1700	28.24	−1.26	—	—	—
			gas	1936	38.64	−8.18	−72.20	1.32	—
LuF_3	94.8	1681.1	orth	298	89.12	19.25	−6.95	—	—
			hex	1230	106.44	—	—	—	25.1
			liq	1457	214.85	−0.54	−2347.20	—	30.3
$LuF_3(g)$	315.3	1246.4	gas	298	81.17	1.17	−9.71	—	—
Lu_2O_3	110.0± 0.4	1878.2± 7.5	cubic	298	112.63	23.01	−15.69	—	—
Mg	32.7	0.0	hcp	298	21.13	11.92	0.15	—	—
			liq	923	34.31	—	—	—	8.5
Mg(g)	148.5	−147.1	gas	298	20.79	—	—	—	—
MgB_2	36.0	92.0		298	49.79	22.72	−7.61	—	—
MgB_4	51.9	105.0		298	66.94	49.66	−10.33	—	—
MgB_{12}	89.5	221.8		298	151.46	—	—	—	—
$MgBr_2$	117.2± 5.0	524.3± 2.5	hex	298	75.65	12.55	−5.40	—	—
			liq	984	104.60	—	—	—	39.3
MgCe	105.6± 3.8	16.1± 3.3	cubic	298	44.56	25.86	—	—	—

TABLE I—*continued*

Substance	$S_{298} \pm \delta S$ (J/deg mol)	$-\Delta H_{298} \pm \delta H$ (kJ/mol)	Phase	T K	$C_p = A + BT + C/T^2 + DT^2$				H_t (kJ/mol)
					A	$B \times 10^3$ (J/deg mol)	$C \times 10^{-5}$ (J/deg mol)	$D \times 10^6$ (J/deg mol)	
$MgCl_2$	89.6± 0.8	641.4± 0.8	rhomb	298	79.08	5.94	−8.62	—	—
			liq	987	92.47	—	—	—	43.1
Mg_2Cu	92.3± 1.3	29.5± 1.3	orth	298	61.09	29.71	—	—	—
			liq	839	96.65	—	—	—	36.0
$MgCu_2$	97.9± 1.7	35.1± 1.7	cubic	298	66.61	24.02	—	—	—
			liq	1092	95.40	—	—	—	41.8
MgF_2	57.2± 0.4	1124.2± 1.3	rutile	298	77.11	3.89	−14.94	—	—
			liq	1536	94.56	—	—	—	58.6
Mg_2Ge	72.9± 1.9	115.2± 1.7	cubic	298	73.43	17.99	−3.18	—	—
MgH_2	31.0± 4.2	76.1± 2.5		298	27.20	49.37	−5.86	—	—
MgI_2	129.7± 8.4	366.9± 6.7	hex	298	75.86	13.72	−4.48	—	—
			liq	907	104.60	—	—	—	29.3
Mg_3N_2	93.7± 7.5	461.5± 7.1	cubic	298	86.90	46.86	—	—	—
			β	823	83.97	44.60	—	—	0.5
			gamma	1061	119.24	—	—	—	0.9
MgO	26.9± 0.4	601.6± 0.4	cubic	298	48.99	3.43	−11.34	—	—
			liq	3105	60.67	—	—	—	77.8
$MgAl_2O_4$	88.7± 4.2	2312.9± 2.5	cubic	298	153.97	26.78	−40.92	—	—
			liq	2408	230.12	—	—	—	196.6
$MgCO_3$	65.9± 0.8	1095.8±12.6	magnes	298	77.91	57.74	−17.41	—	—
$MgCr_2O_4$	105.9± 0.8	1777.8± 3.3	spinel	298	167.44	14.90	−40.08	—	—
$MgGeO_3$	70.5	1208.3± 5.0	cryst	298	119.79	14.73	−29.46	—	—
$Mg(OH)_2$	63.2± 0.4	925.1± 2.1	hex	298	46.82	102.93	—	—	—
$MgMoO_4$	118.8± 0.8	1400.4± 5.0	monocl	298	128.91	34.89	−24.85	−2.93	—
$Mg(NO_3)_2$	164.0	790.8		298	44.69	297.90	7.49	—	—
$Mg_3(PO_4)_2$	189.1± 0.8	3780.7±16.7	cryst	298	121.46	335.77	1.09	−108.78	—
			liq	1621	462.12	7.74	—	—	121.3
Mg_2Pb	119.2±12.6	48.1± 2.9	cubic	298	65.90	34.52	—	—	—
			orth	710	92.88	—	—	—	2.2
			liq	822	94.98	—	—	—	40.2
MgS	50.3± 0.4	345.6± 4.2	cubic	298	48.74	3.64	−3.79	—	—
$MgSO_4$	91.6± 0.8	1284.9±12.6	cryst	298	106.44	46.28	−21.88	—	—
			liq	1400	158.99	—	—	—	14.6
Mg_3Sb_2	136.6±14.6	300.0±14.6	hex	298	112.97	40.17	—	—	—
			cubic	1198	160.67	—	—	—	73.3

Mg_2Si	63.8 ± 2.1	79.1 ± 7.9	cubic	298	68.45	23.01	−5.02	—	—
			liq	1350	93.30	—	—	—	97.9
Mg_2SiO_4	95.2 ± 0.8	2176.9 ± 2.5	forst	298	144.31	38.74	−32.84	−5.48	—
			liq	2163	205.02	—	—	—	71.1
$MgSiO_3$	67.9 ± 0.8	1548.5 ± 3.8	clino	298	92.05	33.05	−17.78	—	—
				903	120.33	—	—	—	0.7
				1258	122.42	—	—	—	1.6
			liq	1850	146.44	—	—	—	75.3
$2MgO.2Al_2O_3.5SiO_2$	407.1	9113.2	cord	298	626.34	91.21	−200.83	—	—
$3MgO.2SiO_2.2H_2O$	222.2	4364.7	serp	298	317.23	132.21	−73.55	—	—
$7MgO.8SiO_2.H_2O$	559.0	12088.0	anthop	298	832.62	142.67	−218.82	—	—
$3MgO.4SiO_2.H_2O$	260.7	5916.2	talc	298	353.00	175.27	−74.27	—	—
MgTe	74.5 ± 10.5	209.2 ± 25.1	hex	298	37.66	10.46	—	—	—
Mg_2TiO_4	115.1 ± 6.3	2164.4 ± 2.1	tet/cu	298	152.38	34.06	−30.54	—	—
			liq	2013	228.45	—	—	—	129.7
$MgTiO_3$	74.6 ± 1.3	1572.6 ± 2.1	trig	298	118.53	13.60	−27.91	—	—
			liq	1953	163.18	—	—	—	90.4
$MgTi_2O_5$	135.6 ± 6.3	2342.0 ± 2.9	orth	298	170.41	38.37	−31.30	—	—
			liq	1963	261.50	—	—	—	146.4
$MgUO_4$	131.9 ± 0.8	1856.9 ± 2.9		298	110.25	66.78	−23.43	—	—
MgV_2O_6	160.7 ± 2.9	2200.8 ± 5.4		298	231.29	−6.09	−64.77	−2.93	—
$Mg_2V_2O_7$	200.0 ± 3.8	2834.7 ± 8.4		298	284.60	4.06	−74.22	−5.82	—
$MgWO_4$	101.0 ± 0.8	1517.1 ± 2.9		298	115.02	42.30	−15.77	—	—
Mn	32.0	0.0	alpha	298	23.85	14.14	−1.57	—	—
			beta	990	34.85	2.76	—	—	2.2
			gamma	1360	25.23	14.90	−1.85	—	2.2
			delta	1410	46.44	—	—	—	1.8
			liq	1517	46.02	—	—	—	14.6
Mn(g)	173.6	−280.7	gas	298	20.79	—	—	—	—
			gas	1600	18.70	0.79	21.21	—	—
MnAs	77.1 ± 0.4	56.9 ± 4.2	hex	298	70.71	—	—	—	—
Mn_2B	66.4	91.6	tetrag	298	69.04	22.80	−16.57	—	—
MnB	36.0	70.7	orth	298	42.47	15.90	−10.13	—	—
Mn_3B_4	118.0	236.4	orth	298	122.59	44.77	−49.92	—	—
MnB_2	44.4	94.1	hex	298	64.43	16.99	−25.02	—	—
$MnBr_2$	138.1 ± 10.5	384.9 ± 8.4	hex	298	67.91	24.81	—	—	—
			liq	971	100.42	—	—	—	33.5
$MnCl_2$	118.2 ± 0.4	481.2 ± 0.8	hex	298	75.48	13.22	−5.73	—	—
			liq	923	94.56	—	—	—	37.7
$MnCl_2(g)$	295.4 ± 6.3	263.6 ± 2.1	gas	298	64.98	—	−6.15	—	—

TABLE I—*continued*

Substance	$S_{298} \pm \delta S$ (J/deg mol)	$-\Delta H_{298} \pm \delta H$ (kJ/mol)	Phase	T K	$C_p = A + BT + C/T^2 + DT^2$				H_t (kJ/mol)
					A	$B \times 10^3$ (J/deg mol)	$C \times 10^{-5}$ (J/deg mol)	$D \times 10^6$ (J/deg mol)	
MnF_2	93.3 ± 0.4	846.8	tetrag	298	61.92	23.85	−1.97	—	—
			liq	1203	92.05	—	—	—	23.0
MnO	59.8 ± 0.8	384.9 ± 1.3	cubic	298	46.48	8.12	−3.68	—	—
			liq	2058	60.67	—	—	—	54.4
Mn_3O_4	154.8 ± 6.3	1387.4 ± 1.7	tetrag	298	144.77	45.44	−12.97	—	—
			cubic	1440	210.04	—	—	—	20.9
Mn_2O_3	110.5 ± 2.1	958.1 ± 2.1	orth	298	112.26	35.06	−13.71	—	—
MnO_2	53.1 ± 0.4	520.9 ± 1.3	tetrag	298	69.45	10.21	−16.23	—	—
$MnAl_2O_4$	103.8 ± 2.1	2100.4 ± 6.3	cubic	298	153.13	25.94	−32.22	—	—
$MnCO_3$	109.6 ± 1.3	881.6 ± 4.6	hex	298	79.83	50.21	—	—	—
$MnFe_2O_4$	154.0	1228.8 ± 5.0	cubic	298	145.60	45.27	−8.79	—	—
$MnMoO_4$	136.0	1191.6 ± 9.6	monocl	298	108.78	51.30	—	—	—
MnP	52.3 ± 9.2	96.2 ± 16.7	rhomb	298	44.94	10.46	—	—	—
MnS	80.3 ± 0.8	214.2 ± 2.1	cubic	298	47.70	7.53	—	—	—
			liq	1803	66.94	—	—	—	26.4
MnS(g)	238.9	−265.7 ± 12.6	gas	298	36.36	—	−3.01	—	—
MnS_2	99.9 ± 0.4	207.1	cubic	298	69.71	17.66	−4.35	—	—
$MnSO_4$	112.3 ± 1.3	1066.1 ± 4.6	orth	298	122.38	37.32	−29.50	—	—
Mn_2Sb	136.8 ± 6.3	32.6 ± 3.3	tetrag	298	66.94	29.29	—	—	—
MnSb	92.5 ± 4.2	27.2 ± 2.5	hex	298	46.02	20.29	—	—	—
MnSe	90.8 ± 1.7	155.6 ± 10.5	cubic	298	48.79	7.70	—	—	—
Mn_3Si	103.8 ± 1.3	110.5 ± 10.5	cubic	298	100.88	52.09	−14.73	—	—
Mn_5Si_3	238.5 ± 3.3	244.3 ± 20.9	hex	298	201.38	54.14	−19.58	—	—
			liq	1573	324.68	—	—	—	173.2
MnSi	46.2 ± 1.3	65.3 ± 5.4	cubic	298	49.33	12.76	−6.40	—	—
			liq	1548	78.66	—	—	—	59.4
$MnSi_{1.7}$	56.1 ± 1.0	75.7 ± 8.4	tetrag	298	71.92	4.60	−13.05	—	—
Mn_2SiO_4	163.2 ± 4.2	1730.9 ± 4.2	orth	298	159.08	19.50	−31.13	—	—
			liq	1620	243.09	—	—	—	88.7
$MnSiO_3$	102.5 ± 2.1	1320.9 ± 2.5	rhodon	298	110.54	16.23	−25.77	—	—
			liq	1564	151.67	—	—	—	66.9
$MnSn_2$	130.9 ± 3.8	27.4 ± 2.9	tetrag	298	92.38	1.26	−11.38	—	—
MnTe	93.7 ± 1.7	109.2 ± 3.8	hex	298	74.35	—	—	—	—
				307	56.69	2.76	—	—	—

$MnTe_2$	145.0± 0.4	123.4± 3.8	cubic	298	76.65	4.18	—	—	—
Mn_2TiO_4	170.3	1750.0	tetrag	298	168.20	17.41	−25.56	—	—
$MnTiO_3$	105.0± 0.8	1359.0	hex	298	121.67	9.29	−21.88	—	—
$MnWO_4$	140.6± 8.4	1305.8± 9.2	monocl	298	108.78	51.30	−34.73	8.87	—
Mo	28.6	0.0	bcc	298	28.52	−4.42	−3.62	4.28	—
			liq	2896	40.33	—	—	—	39.1
Mo(g)	181.8	−658.1	gas	298	20.79	—	—	—	—
			gas	1200	35.40	−13.68	−49.54	3.68	—
Mo_2B	52.6± 8.4	132.2±25.1	tetrag	298	78.45	4.56	−19.37	2.80	—
			liq	2648	111.71	—	—	—	138.1
MoB	25.3± 8.4	123.8±16.7	tetrag	298	45.40	5.82	−13.05	—	—
			liq	2873	80.75	—	—	—	55.2
Mo_2C	65.8± 0.4	52.3± 2.5	orth	298	64.27	23.60	−9.50	4.48	—
			hex	1500	79.50	8.37	—	—	21.8
			liq	2795	100.42	—	—	—	70.3
$MoCl_4$	159.0± 2.5	504.2±20.9	monocl	298	120.50	—	—	—	—
			β	350	107.95	58.58	—	—	4.6
			liq	600	149.79	—	—	—	21.6
$MoCl_4(g)$	371.7	383.7±16.7	gas	298	107.86	−0.42	−9.04	2.76	—
$MoCl_5$	238.5±12.6	526.8± 9.2	monocl	298	165.69	—	—	—	—
			liq	470	88.28	—	—	—	18.8
$MoCl_5(g)$	398.1±12.6	446.9± 9.2	gas	298	136.11	−0.75	−13.26	0.05	—
$MoCl_6(g)$	419.7±16.7	460.2±41.8	gas	298	157.53	0.01	−12.13	—	—
MoF_5	178.7±12.6	1387.4± 4.2	monocl	298	154.81	—	—	—	—
			liq	319	155.64	—	—	—	12.6
$MoF_5(g)$	347.3± 8.4	1240.6± 5.4	gas	298	133.60	0.17	−27.66	0.08	—
$Mo_2F_{10}(g)$	530.9±16.7	2694.5±10.5	gas	298	264.01	13.97	−50.38	0.17	—
$MoF_6(g)$	350.6± 0.4	1556.9± 1.7	gas	298	153.76	1.59	−30.75	—	—
MoO_2	46.4± 0.4	587.9± 1.7	monocl	298	65.61	11.55	−12.13	—	—
$MoO_2(g)$	277.0± 8.4	8.4±12.6	gas	298	55.65	0.44	−10.46	0.30	—
MoO_3	77.8± 0.8	745.2± 0.8	orth	298	75.19	32.64	−8.79	—	—
			liq	1074	126.90	—	—	—	48.5
$MoO_3(g)$	283.8± 4.2	345.2±20.9	gas	298	74.89	6.95	−15.44	−1.46	—
$Mo(CO)_6$	327.2± 1.3	1059.8±10.5	cubic	298	205.23	154.81	—	—	—
Mo_2S_3	115.0± 8.4	406.7± 8.4	monocl	298	110.29	32.97	−9.62	—	—
MoS_2	62.6± 0.4	275.7± 2.5	hex	298	71.65	7.45	−9.20	—	—
Mo_3Si	106.3± 1.3	116.3± 9.2	cubic	298	85.86	22.68	0.32	—	—
Mo_5Si_3	207.9± 9.2	310.0±22.2	tetrag	298	183.34	35.02	−12.01	—	—
$MoSi_2$	65.1± 3.8	131.8± 8.4	tetrag	298	67.86	11.97	−6.57	—	—
$N_2(g)$	191.5	0.0	gas	298	30.42	2.54	−2.37	—	—
N(g)	153.2	−472.7	gas	298	20.79	—	—	—	—
			gas	1800	20.68	0.05	—	—	—

TABLE I—*continued*

Substance	$S_{298} \pm \delta S$ (J/deg mol)	$-\Delta H_{298} \pm \delta H$ (kJ/mol)	Phase	T K	$C_p = A + BT + C/T^2 + DT^2$				H_t (kJ/mol)
					A	$B \times 10^3$ (J/deg mol)	$C \times 10^{-5}$ (J/deg mol)	$D \times 10^6$ (J/deg mol)	
$NH_3(g)$	192.7	45.9	gas	298	37.32	18.66	−6.49	—	—
NH_4Br	111.3 ± 0.6	270.7 ± 1.0	cubic	298	124.68	−35.15	−23.85	—	—
				413	98.32	—	−33.89	—	3.6
NH_4Cl	95.0 ± 2.1	314.6 ± 0.4	cubic	298	38.87	160.25	—	—	—
				458	34.64	111.71	—	—	3.9
NH_4F	72.0 ± 0.2	463.6 ± 2.5	cubic	298	65.27	—	—	—	—
NH_4I	113.0	201.7	cubic	298	60.29	71.76	—	—	—
$N_2O(g)$	219.9 ± 0.2	−82.0 ± 0.6	gas	298	46.11	11.38	−10.04	−2.13	—
$NO(g)$	210.7 ± 0.2	−90.3 ± 0.4	gas	298	29.41	3.85	−0.59	—	—
$N_2O_3(g)$	309.2 ± 0.8	−82.8 ± 1.0	gas	298	80.10	17.82	−18.24	−3.51	—
$NO_2(g)$	239.9 ± 0.4	−33.1 ± 0.8	gas	298	35.69	22.91	−4.70	−6.33	—
				1500	53.76	1.28	—	—	—
$N_2O_4(g)$	304.0 ± 0.8	− 9.4 ± 1.7	gas	298	101.11	24.31	−28.58	−4.85	—
$N_2O_5(g)$	355.6 ± 10.5	−11.7 ± 1.7	gas	298	118.66	35.48	−29.20	−10.50	—
$NO_3(g)$	252.7	−71.1	gas	298	67.78	12.55	−22.51	−2.64	—
$NOBr(g)$	273.4	−82.1	gas	298	51.00	3.39	−6.28	—	—
$NOCl(g)$	261.6 ± 0.4	−52.4 ± 0.8	gas	298	42.80	8.91	−0.71	—	—
NH_4ClO_4	184.1	295.8 ± 5.0	orth	298	67.78	202.38	—	—	—
$NOF(g)$	248.0 ± 0.4	66.1 ± 3.3	gas	298	48.07	6.07	−7.61	—	—
NH_4NO_3	151.0 ± 0.4	365.4 ± 0.8	orth	298	140.16	—	—	—	—
			orth	305	59.41	196.65	—	—	1.7
			tetrag	357	150.62	—	—	—	1.3
			cubic	399	158.99	—	—	—	4.4
$(NH_4)_2SO_4$	220.1 ± 1.3	1180.3 ± 0.8	orth	298	103.55	280.75	—	—	—
Na	51.3	0.0	bcc	298	82.47	−369.32	—	627.60	—
			liq	371	37.51	−19.22	—	10.64	2.6
$Na(g)$	153.6	−107.5	gas	298	20.79	—	—	—	—
$Na_2(g)$	230.1	−142.3	gas	298	32.55	14.35	1.30	−7.74	—
			gas	1200	51.76	−9.58	−22.09	—	—
			gas	1900	69.83	−30.88	—	6.07	—
NaBr	86.9 ± 0.4	361.3 ± 0.4	cubic	298	47.91	13.31	—	—	—
			liq	1020	62.34	—	—	—	26.1
$NaBr(g)$	241.1 ± 0.4	144.3 ± 2.1	gas	298	36.61	1.19	—	—	—

NaCl	72.1 ± 0.4	411.3 ± 0.4	cubic	298	45.94	16.32	—	—	—
			liq	1074	77.78	−7.53	—	—	28.2
			liq	1500	66.94	—	—	—	—
NaCl(g)	229.7 ± 0.4	182.0 ± 0.8	gas	298	37.33	0.74	−1.59	—	—
$NaAlCl_4$	184.1 ± 8.4	1138.5 ± 3.3	rhomb	298	63.60	262.34	—	—	—
NaF	51.2 ± 0.2	572.8 ± 1.7	cubic	298	46.61	9.92	−2.13	—	—
			liq	1269	70.54	—	—	—	33.5
NaF(g)	217.6 ± 0.4	292.9	gas	298	37.15	0.77	−2.89	—	—
Na_3AlF_6	238.5 ± 1.7	3312.1 ± 5.0	monocl	298	172.26	158.45	—	—	—
			cubic	838	282.00	—	—	—	8.4
			cubic	1154	355.64	—	—	—	0.4
			liq	1284	396.22	—	—	—	107.5
$NaBF_4$	145.3 ± 0.8	1844.7 ± 3.3	orth	298	50.96	217.57	3.68	—	—
			monocl	516	152.63	—	—	—	6.7
			liq	679	165.35	—	—	—	13.6
NaH	40.0 ± 0.4	56.5 ± 0.4	cubic	298	26.15	42.80	−2.26	—	—
NaI	98.5 ± 0.4	287.9 ± 0.8	cubic	298	48.87	12.05	—	—	—
			liq	934	64.85	—	—	—	23.6
NaCN	115.7 ± 0.8	90.8	cubic	298	67.36	5.44	—	—	—
			liq	837	79.50	—	—	—	18.4
Na_2O	75.1 ± 0.4	415.1 ± 0.8	cubic	298	55.48	70.21	−4.14	−30.54	—
			β	1023	82.30	12.76	—	—	1.8
			gamma	1243	84.85	10.71	—	—	11.9
			liq	1405	104.60	—	—	—	47.7
Na_2O_2	94.8 ± 1.3	513.0 ± 6.3	hex	298	85.48	42.68	−8.03	—	—
			β	785	113.60	—	—	—	5.6
NaO_2	115.9 ± 1.3	260.7 ± 3.3	cubic	298	59.96	40.84	—	—	—
NaO(g)	228.4 ± 1.7	−102.5 ± 20.9	gas	298	37.24	0.92	−2.13	—	—
$NaAlO_2$	184.1 ± 0.8	1138.5 ± 5.9	orth	298	89.16	15.27	−17.95	—	—
			tetrag	740	89.16	15.27	−17.95	—	1.3
Na_3AsO_4	186.2 ± 5.4	1540.1 ± 6.7	rhomb	298	170.29	—	—	—	1.8
$NaBO_2$	73.5 ± 0.4	975.7 ± 2.5	hex	298	79.54	23.56	−18.41	—	—
			liq	1240	146.44	—	—	—	33.5
$Na_2B_4O_7$	189.5 ± 0.8	3284.9 ± 5.9	tricli	298	206.10	77.11	−37.49	—	—
			liq	1016	444.88	—	—	—	81.2
NaB_3O_5	116.1 ± 4.6	2299.1 ± 7.1	monocl	298	40.92	282.29	4.69	−95.81	—
$Na_2B_8O_{13}$	276.1 ± 16.7	5902.8 ± 10.0	monocl	298	345.18	226.35	−95.81	—	—
Na_2CO_3	135.0 ± 0.8	1129.7 ± 0.8	monocl	298	11.00	244.05	24.48	—	—
			hex	723	50.08	129.08	—	—	0.7
			liq	1130	189.54	—	—	—	29.7
$NaClO_4$	143.9 ± 0.4	377.8 ± 1.7	orth	298	138.49	54.10	−39.33	—	—

TABLE I—*continued*

Substance	$S_{298} \pm \delta S$ (J/deg mol)	$-\Delta H_{298} \pm \delta H$ (kJ/mol)	Phase	T K	$C_p = A + BT + C/T^2 + DT^2$				H_t (kJ/mol)
					A	$B \times 10^3$ (J/deg mol)	$C \times 10^{-5}$	$D \times 10^6$	
$NaClO_3$	126.4 ± 4.2	357.7 ± 1.3	cubic	298	54.68	154.81	—	—	—
			liq	528	133.05	—	—	—	22.6
$NaCrO_2$	81.2 ± 5.0	876.5 ± 4.6	hex	298	94.56	15.06	−8.58	—	—
Na_2CrO_4	176.6 ± 0.4	1334.3 ± 9.2	orth	298	101.04	140.00	—	—	—
			hex	694	149.95	51.59	—	—	9.6
			liq	1070	204.60	—	—	—	24.3
$NaFeO_2$	88.3 ± 0.8	698.3 ± 5.9	orth	298	98.83	14.23	−16.74	—	—
				1270	98.83	14.23	−16.74	—	2.2
			liq	1620	125.52	—	—	—	49.4
NaOH	64.4 ± 0.4	425.9 ± 0.8	orth	298	71.76	−110.88	—	235.77	—
			cubic	572	85.98	—	—	—	7.2
			liq	596	89.45	−5.86	—	—	6.6
$NaHCO_3$	101.3 ± 0.8	949.1 ± 0.8	monocl	298	45.31	143.09	—	—	—
Na_2MoO_4	159.4 ± 1.3	1534.3 ± 11.3	cubic	298	142.80	58.32	−16.65	—	—
			rhomb	718	−215.48	506.26	—	—	21.8
			rhomb	866	−585.76	891.19	—	—	2.1
			delta	915	1105.41	−1204.99	—	—	8.3
			liq	962	212.97	—	—	—	21.4
$Na_2Mo_2O_7$	250.6 ± 2.1	2361.0 ± 12.6	orth	298	173.64	144.35	—	—	—
$NaNO_3$	116.3 ± 0.4	468.2 ± 1.3	hex	298	25.69	225.94	—	—	—
			liq	580	155.64	—	—	—	15.1
$NaPO_3$	95.5 ± 0.8	1220.1 ± 2.1	rhomb	298	52.93	115.06	—	—	—
Na_3PO_4	173.8 ± 0.8	1916.9 ± 2.1	tetrag	298	153.47	—	—	—	—
$Na_4P_2O_7$	270.3 ± 1.7	3166.5	rhomb	298	241.12	—	—	—	—
Na_2S	96.2 ± 14.6	366.1 ± 12.6	cubic	298	83.16	13.81	−0.25	—	—
Na_2SO_4	149.6 ± 0.4	1389.5 ± 1.3	orth	298	82.34	154.35	—	—	—
				522	145.06	54.60	—	—	10.8
			hex	980	142.67	59.33	—	—	0.3
			liq	1157	197.40	—	—	—	23.0
$Na_2SO_4.7H_2O$	411.7 ± 2.1	3456.8 ± 3.8	cryst	298	348.11	157.32	—	—	—
$Na_2SO_4.10H_2O$	585.8 ± 0.8	4328.8 ± 4.6	cryst	298	585.76	—	—	—	—
Na_2SO_3	146.0 ± 1.7	1095.0	hex	298	107.11	43.51	—	—	—
			liq	1184	182.00	—	—	—	25.9
Na_2SiF_6	207.1 ± 0.8	2912.9 ± 3.8	hex	298	182.00	72.17	−15.27	—	—
			liq	1120	276.14	—	—	—	99.6

Na_4SiO_4	195.8 ± 2.5	2101.2 ± 25.1	monocl	298	162.59	74.22	—	—	—
			liq	1393	259.41	—	—	—	57.7
Na_2SiO_3	113.8 ± 0.8	1563.1	orth	298	130.29	40.17	−27.07	—	—
			liq	1361	179.08	—	—	—	52.3
$Na_2Si_2O_5$	164.4 ± 2.9	2473.6 ± 5.0	monocl	298	185.69	70.54	−44.64	—	—
			orth	983	292.88	—	—	—	2.5
			liq	1147	261.08	—	—	—	35.6
$Na_2O.Al_2O_3.4SiO_2$	266.9	6039.6 ± 18.8	jadeit	298	403.00	95.56	−99.37	—	—
$Na_2O.Al_2O_3.6SiO_2$	420.1	7841.2 ± 10.0	l.alb	298	516.31	116.32	−125.60	—	—
			h.alb	973	565.59	81.67	−171.80	—	28.5
$Na_2O.Al_2O_3.2SiO_2$	248.5	4163.5	nephel	298	55.48	590.78	—	—	—
				467	224.18	134.22	—	—	—
				980	224.18	134.22	—	—	17.1
				1180	344.01	11.05	—	—	—
Na_2Te	96.2	334.7 ± 25.1	cubic	298	73.22	13.81	—	—	—
Na_2TiO_3	121.6 ± 0.4	1552.7 ± 2.1	cubic	298	135.19	46.78	−21.25	—	—
			β	560	108.57	71.13	—	—	1.7
			liq	1303	196.23	—	—	—	70.3
$Na_2Ti_2O_5$	173.8 ± 0.8	2513.7 ± 62.8	orth	298	230.71	9.62	−52.63	—	—
			liq	1258	286.60	—	—	—	112.3
$Na_2Ti_3O_7$	233.9 ± 0.8	3481.9 ± 4.2	monocl	298	294.76	20.63	−63.68	—	—
			liq	1401	393.92	—	—	—	155.2
Na_3UO_4	198.2 ± 0.8	2023.8 ± 2.9	cubic	298	188.91	25.19	−20.92	—	—
Na_2UO_4	166.1 ± 0.8	1889.5 ± 2.5	rhomb	298	162.55	25.90	−20.92	—	—
			β	1193	224.68	—	—	—	20.9
Na_3VO_4	189.5 ± 1.7	1841.4 ± 10.5	cubic	298	188.28	25.73	−27.66	—	—
$Na_4V_2O_7$	318.4 ± 1.7	3037.2 ± 10.5	cryst	298	323.42	28.87	−55.31	—	—
$NaVO_3$	113.8 ± 0.8	1191.6 ± 10.5	monocl	298	127.70	3.14	−27.61	—	—
Na_2WO_4	160.7 ± 1.3	1541.8	cubic	298	107.19	115.98	—	—	—
			β	864	209.20	—	—	—	34.4
			liq	969	209.20	—	—	—	23.8
Nb	36.6	0.0	bcc	298	27.78	−3.84	−2.55	3.60	—
			liq	2745	41.78	—	—	—	30.5
Nb(g)	186.1	−722.6	gas	298	32.13	−8.79	0.50	2.59	—
NbB_2	37.4 ± 0.8	175.3 ± 16.7	hex	298	46.99	38.53	−9.41	—	—
$NbBr_5$	305.4	556.1 ± 1.7	orth	298	116.78	130.54	—	—	—
			liq	540	184.10	—	—	—	35.6
$NbBr_5(g)$	449.2	443.5	gas	298	132.84	0.10	−6.28	—	—
Nb_2C	64.0 ± 0.4	195.0 ± 5.0		298	63.39	13.56	−3.47	—	—
$NbC_{0.7}$	31.9	116.7		298	39.92	6.49	−6.19	—	—
NbC	35.4 ± 0.4	141.4 ± 2.5	cubic	298	45.52	6.32	−9.04	—	—

TABLE I—*continued*

Substance	$S_{298} \pm \delta S$ (J/deg mol)	$-\Delta H_{298} \pm \delta H$ (kJ/mol)	Phase	T K	$C_p = A + BT + C/T^2 + DT^2$				H_t (kJ/mol)
					A	$B \times 10^3$ (J/deg mol)	$C \times 10^{-5}$ (J/deg mol)	$D \times 10^6$ (J/deg mol)	
$NbCl_4$	179.9 ± 10.5	694.5 ± 6.3	orth	298	133.47	—	−12.13	—	—
$NbCl_5$	214.2 ± 4.2	797.5 ± 4.2	monocl	298	148.53	—	—	—	—
			liq	479	184.10	—	—	—	33.9
$NbCl_5$(g)	404.0 ± 3.3	703.3 ± 8.4	gas	298	133.13	—	−12.55	—	—
$NbCr_2$	83.7 ± 0.4	20.9 ± 2.5	cubic	298	74.27	23.77	−7.36	—	—
NbF_5	157.3 ± 2.1	1813.8 ± 4.2	monocl	298	139.33	—	—	—	—
			liq	352	177.82	—	—	—	12.2
NbF_5(g)	382.8	1719.2 ± 8.4	gas	298	130.67	1.09	−24.69	—	—
Nb_2N	79.5	253.1 ± 7.1	hex	298	62.38	17.11	—	—	—
			hex	1000	70.75	8.74	—	—	—
NbN	43.9	236.4 ± 6.3	cubic	298	36.36	22.59	—	—	—
			hex	600	43.81	8.31	—	—	—
			hex	1643	62.76	—	—	—	4.2
			liq	2320	62.76	—	—	—	46.0
NbO	46.0 ± 8.4	419.7 ± 12.6	hex	298	42.97	8.87	−4.02	—	—
			liq	2210	62.76	—	—	—	85.4
NbO(g)	238.9 ± 3.8	−198.7 ± 20.9	gas	298	35.52	1.09	−4.56	—	—
NbO_2	54.5 ± 0.4	795.0 ± 8.4	tetrag	298	61.30	25.77	−10.21	—	—
			tetrag	1090	89.04	—	—	—	3.4
			tetrag	1200	83.05	—	—	—	—
			liq	2175	94.14	—	—	—	42.3
NbO_2(g)	272.0 ± 8.4	200.0 ± 20.9	gas	298	54.77	1.59	−10.17	—	—
Nb_2O_5	137.3 ± 1.3	1899.5 ± 4.2	orth	298	162.17	14.81	−30.63	—	—
			liq	1785	242.25	—	—	—	104.2
$NbOCl_2$	121.3	774.0 ± 8.4	cryst	298	96.23	16.74	−7.11	—	—
$NbOCl_3$	159.0 ± 10.5	880.7 ± 10.5	cryst	298	133.47	—	−12.13	—	—
$NbOCl_3$(g)	343.1	770.3	gas	298	107.95	—	−8.37	—	—
Nb_5Si_3	251.0	451.9 ± 108.8	tetrag	298	189.12	30.79	−15.06	—	—
$NbSi_2$	69.9 ± 10.5	138.1 ± 41.8	hex	298	63.18	15.36	−2.80	—	—
Nd	71.1	0.0	hcp	298	14.66	26.92	4.48	—	—
			bcc	1128	44.56	—	—	—	3.0
			liq	1289	48.79	—	—	—	7.1
Nd(g)	189.3	−327.6	gas	298	17.95	19.29	−0.79	−8.45	—
			gas	1000	28.79	1.42	−14.81	—	—

$NdCl_3$	153.0± 0.8	1040.6± 2.1	hex	298	82.84	55.06	—	—	—
			liq	1032	146.44	—	—	—	48.5
NdF_3	116.3± 8.4	1712.9± 7.5	hex	298	78.66	34.64	5.36	—	—
			liq	1650	133.89	—	—	—	54.8
NdH_2	58.9± 0.4	202.1	cubic	298	38.24	16.11	—	—	—
NdI_3	215.1	628.4	rhomb	298	90.86	35.82	−0.63	—	—
			β	847	117.40	—	—	—	13.8
			liq	1060	155.73	—	—	—	41.4
Nd_2O_3	158.6± 0.4	1808.3± 3.3	cubic	298	115.77	29.79	−11.88	—	—
			hex	1395	155.64	—	—	—	0.6
NdOCl	79.9± 7.9	1005.8± 6.7	tetrag	298	68.62	19.12	−3.97	—	—
NdS	74.1± 4.2	464.8± 5.0	tetrag	298	46.19	8.37	—	—	—
Nd_2S_3	185.4± 0.8	1125.5±14.6	orth	298	118.53	13.35	—	—	—
Ni	29.9	0.0	fcc	298	11.17	37.78	3.18	—	—
			fcc	631	20.54	10.08	15.40	—	—
			liq	1728	38.91	—	—	—	17.2
Ni(g)	182.1	−430.1	gas	298	26.11	−1.30	−2.18	—	—
Ni_3Al	113.8	153.1± 4.6	cubic	298	88.49	32.22	—	—	—
NiAl	54.1	118.4± 4.2	cubic	298	41.84	13.81	—	—	—
			liq	1912	71.13	—	—	—	62.8
Ni_2Al_3	136.4	282.4±14.6	hexag	298	106.06	34.31	—	—	—
$NiAl_3$	110.7	150.6± 6.3	ortho	298	84.10	35.15	—	—	—
NiAs	51.9	72.0	hex	298	44.10	12.97	—	—	—
Ni_3B	87.9	88.9	orth	298	95.40	26.36	−15.56	—	—
Ni_2B	66.3	63.8	tetrag	298	66.94	22.18	−12.05	—	—
Ni_4B_3	110.1	179.1	orth	298	156.06	49.16	−37.78	—	—
NiB	28.5	46.4	orth	298	42.97	14.64	−11.25	—	—
NiBi	88.3	7.7	hex	298	46.02	19.25	—	—	—
$NiBr_2$	120.9	213.8± 2.5	hex	298	69.04	19.66	—	—	—
$NiBr_2(g)$	320.9	−11.7	gas	298	68.70	−1.00	−4.94	—	—
			gas	1100	67.20	—	—	—	—
NiBr(g)	262.4	−184.1	gas	298	39.87	0.79	−3.51	—	—
$NiCl_2$	98.1± 0.4	304.6± 2.1	hex	298	73.22	13.22	−4.98	—	—
NiCl(g)	251.3	−179.9	gas	298	39.66	0.84	−4.10	—	—
$NiAl_2Cl_8(g)$	610.9	1543.9	gas	298	251.37	8.58	−25.19	—	—
NiF_2	73.6± 0.4	657.7± 2.1	tetrag	298	66.48	13.64	−5.73	—	—
$NiF_2(g)$	272.8± 2.5	330.0	gas	298	63.18	2.34	−10.13	—	—
NiF(g)	114.0	−104.6	gas	298	39.16	1.13	−6.15	—	—
NiH(g)	73.6	−393.3	gas	298	31.30	0.31	−2.72	—	—
NiI_2	154.0	78.2	hex	298	65.90	24.27	—	—	—
NiI(g)	270.1	−246.9	gas	298	40.21	0.46	−3.35	—	—

TABLE I—*continued*

Substance	$S_{298} \pm \delta S$ (J/deg mol)	$-\Delta H_{298} \pm \delta H$ (kJ/mol)	Phase	T K	$C_p = A + BT + C/T^2 + DT^2$ A	$B \times 10^3$ (J/deg mol)	$C \times 10^{-5}$ (J/deg mol)	$D \times 10^6$ (J/deg mol)	H_t (kJ/mol)
NiO	38.0± 0.4	239.7± 1.3	cubic	298	−20.88	157.23	16.28	—	—
			β	525	58.07	—	—	—	—
			gamma	565	46.78	8.45	—	—	—
NiO(g)	241.2	−309.6	gas	298	42.33	−0.51	−0.78	—	—
$NiAl_2O_4$	98.3± 3.8	1920.5± 4.6	cubic	298	159.20	23.35	−30.75	—	—
$NiCO_3$	86.2± 0.4	696.2±12.6	hex	298	88.70	38.91	−12.34	—	—
$Ni(CO)_4$(g)	415.5± 0.8	600.4± 4.2	gas	298	209.62	—	−53.56	—	—
$NiCr_2O_4$	129.7± 0.8	1375.7± 4.2	cubic	298	167.15	17.87	−21.05	—	—
$Ni(OH)_2$(g)	291.2	255.2	gas	298	87.07	5.56	−26.48	—	—
Ni_3P	106.3	220.1±10.5	tetrag	298	77.82	33.47	—	—	—
Ni_5P_2	184.9	436.0±16.7	cryst	298	135.14	56.48	—	—	—
Ni_2P	77.4	184.9±16.7	hex	298	57.95	23.01	—	—	—
Ni_6P_5	276.1	627.6±62.8	cryst	298	241.00	71.13	—	—	—
Ni_3S_2	133.9± 0.8	216.3± 5.0	hex	298	110.79	51.67	−7.53	—	—
			β	829	188.61	—	—	—	56.2
			liq	1062	191.79	—	—	—	19.7
NiS	53.0± 0.4	87.9± 6.3	rhomb	298	44.69	19.04	−2.89	—	—
			hex	652	34.39	28.66	—	—	6.4
			liq	1249	76.78	—	—	—	30.1
Ni_3S_4	186.6	301.2±25.1	cubic	298	121.96	143.68	—	—	—
$NiSO_4$	101.3± 1.7	873.2± 1.3	orth	298	125.94	27.82	−32.64	—	—
NiSb	78.2	83.7	hex	298	46.23	11.63	—	—	—
$NiSe_2$	103.5± 0.4	64.6± 2.9	cubic	298	76.65	13.14	−4.60	—	—
$NiSeO_3$	103.3	567.4	cryst	298	79.50	59.83	—	—	—
NiSi	44.4± 3.3	89.5± 7.5	orth	298	48.74	6.15	−6.53	—	—
			liq	1265	79.50	—	—	—	43.0
$Ni_{.35}Si_{.65}$	22.0± 1.7	31.4± 4.2	cubic	298	25.02	3.68	−3.60	—	—
Ni_2SiO_4	110.0± 8.4	1400.8± 9.2	orth	298	185.10	19.87	−56.90	—	—
NiTe	80.0± 0.8	35.6	hex	298	54.48	6.78	−3.83	—	—
Ni_3Ti	138.1±14.6	139.3± 8.4	hex	298	108.95	16.86	—	—	—
$NiTi_2$	83.7	80.8± 7.9	cubic	298	67.99	23.43	—	—	—
$NiTiO_3$	82.8± 4.2	1202.1± 6.3	trigon	298	115.10	15.98	−18.20	—	—
$NiWO_4$	118.0± 6.3	1128.8± 2.1	monocl	298	110.62	53.39	−4.39	—	—
O_2(g)	205.1	0.0	gas	298	29.96	4.18	−1.67	—	—

$O_3(g)$	238.8 ± 0.4	−142.3 ± 2.1	gas	298	44.35	15.61	−8.62	−4.35	—
O(g)	161.0	−249.2	gas	298	20.88	−0.05	0.97	—	—
Os	32.6	0.0	hcp	298	23.56	3.85	—	—	—
Os(g)	192.5	−788.0	gas	298	13.22	11.13	5.48	−1.59	—
			gas	3200	33.18	—	−229.83	0.21	—
OsO_2	51.9 ± 10.9	294.6 ± 9.6	tetrag	298	69.96	10.38	−14.18	—	—
OsO_4	136.8 ± 8.4	393.7 ± 8.4	monocl	298	151.46	—	—	—	—
			liq	314	157.74	—	—	—	14.3
$OsO_4(g)$	293.6 ± 0.4	336.2 ± 8.8	gas	298	85.98	20.42	−15.98	—	—
OsS_2	54.8 ± 8.4	146.9 ± 16.7	cubic	298	68.53	11.84	−8.79	—	—
$OsSe_2$	81.6 ± 12.6	120.1 ± 20.9	cubic	298	73.64	11.09	−4.18	—	—
P	41.1	0.0	white	298	19.12	15.82	—	—	—
			liq	317	26.32	—	—	—	0.7
P(r)	22.8 ± 0.2	17.4 ± 0.2	red	298	16.74	14.90	—	—	—
P(g)	163.1 ± 0.0	−316.5 ± 1.0	gas	298	20.79	—	—	—	—
$P_2(g)$	218.0 ± 0.2	−144.0 ± 0.4	gas	298	36.32	0.79	−4.14	—	—
$P_4(g)$	279.9 ± 0.3	−58.9 ± 0.3	gas	298	82.11	0.68	−13.44	—	—
$PBr_3(g)$	348.1 ± 0.4	145.9 ± 9.2	gas	298	74.43	0.18	−61.40	—	—
PCl_3	218.5 ± 1.0	320.9 ± 9.2	liq	298	131.38	—	—	—	—
$PCl_3(g)$	311.7 ± 0.5	288.7 ± 4.2	gas	298	82.37	0.41	−9.41	—	—
$PCl_5(g)$	364.0 ± 1.7	360.2 ± 9.6	gas	298	131.46	0.84	−17.78	—	—
$PF_3(g)$	272.8 ± 0.8	958.1	gas	298	67.43	14.99	−11.77	—	—
			gas	800	82.48	0.26	−32.67	—	—
$PF_5(g)$	300.7	1576.9 ± 1.3	gas	298	101.59	29.80	−22.84	—	—
			gas	800	131.08	0.69	−62.63	—	—
$PH_3(g)$	210.2 ± 0.4	− 5.4 ± 2.1	gas	298	26.30	40.48	−1.14	—	—
			gas	800	68.28	5.44	−90.29	—	—
PN(g)	211.0 ± 0.3	−104.6	gas	298	28.87	9.12	−1.61	−2.51	—
$P_4O_6(g)$	345.6 ± 1.3	2214.2	gas	298	182.42	48.12	−47.03	—	—
P_2O_5	114.4 ± 0.8	1505.0 ± 7.5	hex	298	74.89	162.34	−15.61	—	—
$P_4O_{10}(g)$	403.8	2834.2	gas	298	278.78	33.51	−9.12	—	—
$POBr_3(g)$	359.7 ± 0.4	406.6	gas	298	96.50	10.52	−8.70	—	—
$POCl_3$	222.5 ± 0.8	597.5 ± 2.1	liq	298	138.78	—	—	—	—
$POCl_3(g)$	325.4 ± 0.8	542.2 ± 2.1	gas	298	102.90	2.61	−17.26	—	—
P_4S_3	203.3 ± 0.4	154.4	orth	298	165.27	—	—	—	—
			hex	314	162.88	56.90	—	—	10.3
			liq	446	230.12	—	—	—	20.2
PS(g)	235.1 ± 0.8	−238.5 ± 9.6	gas	298	37.03	0.50	−1.80	—	—
P_2S_3	140.8 ± 8.4	121.3 ± 10.5	cryst	298	79.41	108.37	—	—	—
Pb	64.8	0.0	fcc	298	24.23	8.70	—	—	—
			liq	601	32.49	−3.10	—	—	4.8
			liq	1300	28.62	—	—	—	—

TABLE I—*continued*

Substance	$S_{298} \pm \delta S$ (J/deg mol)	$-\Delta H_{298} \pm \delta H$ (kJ/mol)	Phase	T K	$C_p = A + BT + C/T^2 + DT^2$				H_t (kJ/mol)
					A	$B \times 10^3$ (J/deg mol)	$C \times 10^{-5}$ (J/deg mol)	$D \times 10^6$ (J/deg mol)	
Pb(g)	175.3	−195.2	gas	298	20.79	—	—	—	—
			gas	900	17.70	−1.13	19.25	2.22	—
$PbBr_2$	161.1 ± 2.1	277.4 ± 2.5	orth	298	55.86	50.75	7.66	—	—
			liq	644	112.13	—	—	—	16.4
$PbCl_2$	136.0 ± 2.1	359.4 ± 0.8	orth	298	68.49	29.04	—	—	—
			liq	774	111.50	—	—	—	21.9
$PbCl_2$(g)	317.1 ± 2.9	174.1 ± 1.3	gas	298	58.03	0.33	−2.64	—	—
PbF_2	113.0 ± 8.4	677.0 ± 4.2	orth	298	74.29	18.83	−5.44	—	—
				716	74.29	18.83	−5.44	—	8.4
			liq	1103	109.20	—	—	—	14.7
PbF_2(g)	292.5 ± 3.3	435.1 ± 8.4	gas	298	57.40	0.54	−5.90	—	—
PbI_2	174.9 ± 0.4	175.3 ± 0.8	hex	298	72.17	18.07	—	—	—
			liq	683	108.57	—	—	—	23.4
PbO	66.3 ± 0.8	219.4 ± 0.8	r.tet	298	52.38	8.66	−8.20	—	—
			y.orth	762	45.27	12.80	−2.99	—	0.2
PbO(g)	239.9 ± 0.2	−70.3 ± 7.1	gas	298	36.53	0.77	−3.91	—	—
Pb_3O_4	212.0 ± 6.7	718.8 ± 6.3	tetrag	298	187.19	14.48	−33.39	9.37	—
PbO_2	71.8 ± 0.4	274.5 ± 2.9	tetrag	298	63.22	31.00	−8.95	−13.97	—
$PbCO_3$	131.0 ± 3.3	699.6 ± 5.4	orth	298	51.84	119.66	—	—	—
$PbMoO_4$	166.1 ± 2.1	1053.1 ± 5.0	tetrag	298	124.06	46.65	−16.53	—	—
$Pb(NO_3)_2$	218.0 ± 6.7	451.9 ± 3.3	cryst	298	125.94	149.37	−16.74	—	—
PbS	91.3 ± 1.7	98.3 ± 2.1	cubic	298	46.74	9.41	—	—	—
			liq	1387	66.94	—	—	—	18.8
PbS(g)	251.3 ± 0.2	−131.8 ± 6.3	gas	298	37.32	0.38	−2.05	—	—
$PbSO_4$	148.5 ± 0.8	920.0 ± 1.3	orth	298	74.18	102.51	−1.55	—	—
			monocl	1139	184.10	—	—	—	17.2
			liq	1443	179.91	—	—	—	40.2
PbSe	102.5 ± 2.1	100.0 ± 2.1	cubic	298	47.24	10.00	—	—	—
			liq	1350	62.76	—	—	—	49.4
PbSe(g)	263.6 ± 4.2	−126.4 ± 8.4	gas	298	37.40	—	−1.05	—	—
$PbSeO_3$	148.5	537.6	monocl	298	85.77	46.02	—	—	—
Pb_2SiO_4	186.6 ± 2.1	1369.0 ± 2.5	α	298	127.70	82.55	−13.68	—	—
			β	600	199.58	−1.55	−91.09	—	—
			liq	1018	189.12	—	—	—	53.6

$PbSiO_3$	109.6± 1.3	1147.7± 3.3	cryst	298	74.64	110.75	−11.46	−54.14	—
			liq	1037	130.12	—	—	—	34.5
PbTe	110.0± 2.1	68.6± 1.3	cubic	298	47.20	11.25	—	—	—
			liq	1197	62.76	—	—	—	57.3
$PbTiO_3$	111.9±13.4	1194.7±13.8	orth	298	120.29	17.91	−18.20	—	—
			β	763	109.08	22.80	−13.35	—	4.8
$PbWO_4$	167.8± 1.7	1121.3± 7.9	tetrag	298	120.00	41.25	—	—	—
Pd	37.9	0.0	fcc	298	23.78	7.39	—	—	—
			fcc	400	24.61	5.30	—	—	—
			fcc	1400	20.72	8.08	—	—	—
			liq	1825	34.73	—	—	—	17.6
Pd(g)	166.9	−377.0	gas	298	20.79	—	—	—	—
			gas	800	−6.74	20.17	74.81	—	—
			gas	2100	44.56	16.19	−949.01	−4.31	—
$PdCl_2$	103.8±12.6	173.2±12.6	hex	298	69.04	20.92	—	—	—
			liq	952	94.14	—	—	—	18.4
PdI_2	150.6±10.5	63.6±10.5	monocl	298	68.20	23.01	—	—	—
PdO	38.9± 4.2	115.5± 3.3	tetrag	298	45.31	7.03	−1.26	0.38	—
Pd_4S	180.7± 0.4	69.0± 2.1	tetrag	298	100.42	48.53	—	—	—
PdS	56.5± 6.3	70.7± 6.3	tetrag	298	41.71	17.20	−3.05	—	—
PdS_2	87.9±12.6	78.2±12.6	orth	298	68.58	15.77	−6.57	—	—
PdTe	89.6± 0.4	37.7±16.7	hex	298	47.45	129.29	—	—	—
$PdTe_2$	126.6± 0.4	54.4±20.9	hex	298	70.63	20.08	—	—	—
Pr	73.6	0.0	hcp	298	18.83	17.07	3.05	3.97	—
			bcc	1065	38.49	—	—	—	3.2
			liq	1191	42.97	—	—	—	6.9
Pr(g)	189.7	−355.6	gas	298	13.89	24.35	1.00	−10.42	—
			gas	1100	31.42	—	−27.15	−0.88	—
			gas	1600	30.46	−1.84	7.61	0.17	—
$PrCl_3$	153.3± 0.8	1057.7± 2.1	hex	298	88.37	45.61	−2.76	—	—
			liq	1059	133.89	—	—	—	50.6
$PrCl_3(g)$	379.5± 6.7	730.1± 5.0	gas	298	86.19	—	−3.35	—	—
PrF_3	117.2± 8.4	1712.1± 5.0	trigon	298	92.05	19.96	4.75	—	—
			liq	1672	130.75	—	—	—	57.3
$PrF_3(g)$	344.3± 4.2	1279.9±11.7	gas	298	83.55	—	−6.95	—	—
PrH_2	56.8± 0.3	200.0± 3.3	cubic	298	35.48	18.83	—	—	—
PrI_3	226.4±16.7	654.4±16.7	orth	298	89.12	40.58	—	—	—
			liq	1011	143.09	—	—	—	52.3
Pr_2O_3	155.6± 2.1	1809.6	hex	298	119.66	17.78	−7.41	—	—
			cubic	2150	154.81	—	—	—	—
			liq	2570	152.30	—	—	—	92.0

TABLE I—*continued*

Substance	$S_{298} \pm \delta S$ (J/deg mol)	$-\Delta H_{298} \pm \delta H$ (kJ/mol)	Phase	T K	$C_p = A + BT + C/T^2 + DT^2$				H_t (kJ/mol)
					A	$B \times 10^3$ (J/deg mol)	$C \times 10^{-5}$	$D \times 10^6$	
PrS	77.8 ± 4.2	451.9 ± 25.1	cubic	298	51.97	4.39	—	—	—
Pt	41.5	0.0	fcc	298	24.69	5.02	−0.50	—	—
			fcc	1000	24.43	5.23	−0.75	—	—
			liq	2042	34.69	—	—	—	19.7
Pt(g)	192.3	−565.0	gas	298	36.32	−14.02	−5.86	—	—
			gas	500	31.21	−11.34	1.34	3.56	—
			gas	1700	18.66	1.38	33.64	—	—
$PtBr_4$	251.0	140.6 ± 16.7	rhomb	298	150.62	—	—	—	—
$PtCl_4$	205.0 ± 20.9	236.8 ± 16.7	cubic	298	146.44	—	—	—	—
$PtO_2(g)$	255.9 ± 10.5	−168.6 ± 10.5	gas	298	55.44	2.09	−11.51	—	—
PtS	55.1 ± 0.4	83.1 ± 2.5	tetrag	298	41.71	17.20	−3.05	—	—
PtS_2	74.7 ± 0.4	110.9 ± 2.5	hex	298	68.58	15.77	−6.57	—	—
Pt_5Se_4	336.8 ± 31.4	242.7 ± 37.7	monocl	298	188.28	78.45	—	—	—
PuN	64.9	299.2	cubic	298	44.89	15.48	—	—	—
Rb	76.8	0.0	bcc	298	31.71	—	—	—	—
			liq	313	40.88	−26.21	0.33	14.14	2.2
Rb(g)	170.0	−80.9	gas	298	20.79	—	—	—	—
$Rb_2(g)$	270.7	−118.4	gas	298	37.28	2.00	—	—	—
RbBr	110.0 ± 0.8	394.6 ± 0.8	cubic	298	49.37	10.67	—	—	—
			liq	965	66.94	—	—	—	23.3
RbCl	95.2 ± 0.4	435.1 ± 0.8	cubic	298	48.24	10.46	—	—	—
			liq	996	64.02	—	—	—	23.7
RbF	77.8 ± 2.1	555.6 ± 1.7	cubic	298	33.33	38.53	5.02	—	—
			liq	1050	59.41	—	—	—	23.0
RbH	58.6 ± 6.3	52.3 ± 0.4	cubic	298	27.70	40.67	—	—	—
RbI	118.8 ± 0.8	331.8 ± 5.0	cubic	298	49.08	11.30	—	—	—
			liq	929	66.53	—	—	—	22.0
Rb_2O	125.5 ± 4.2	338.9 ± 8.4	cubic	298	60.25	46.02	—	—	—
			hex	613	89.96	—	—	—	4.6
			liq	778	95.81	—	—	—	20.9
$RbBO_2$	94.6 ± 0.4	974.9 ± 20.9	cryst	298	58.37	50.63	—	—	—
Rb_2CO_3	181.3 ± 0.4	1133.0 ± 13.8	monocl	298	105.86	80.75	−10.88	—	—
RbOH	92.0 ± 8.4	418.8 ± 3.3	cryst	298	64.85	71.13	—	—	—
			β	508	79.50	—	—	—	5.4
			liq	658	83.68	—	—	—	8.9

Rb_2S	133.1 ± 12.6	361.1 ± 20.9	cubic	298	77.40	20.92	—	—	—
Rb_2SO_4	197.5 ± 0.4	1437.2 ± 1.3	orth	298	84.94	164.43	—	—	—
			hex	930	81.84	84.94	—	—	4.2
			liq	1341	207.11	—	—	—	38.4
Re	36.5	0.0	hcp	298	23.68	5.44	—	—	—
Re(g)	188.8	−775.0	gas	298	20.79	—	—	—	—
			gas	1400	29.75	−10.84	—	3.26	—
$ReBr_3$	200.8 ± 16.7	175.7 ± 5.9	monocl	298	80.33	68.20	—	—	—
$ReCl_3$	123.8 ± 0.4	263.6 ± 10.5	hex	298	105.48	27.61	−19.08	—	—
$ReF_6(g)$	363.6 ± 2.1	1353.5 ± 12.6	gas	298	155.64	1.30	−31.59	—	—
ReO_2	62.8 ± 4.6	432.6 ± 5.0	monocl	298	67.36	12.68	−12.93	—	—
ReO_3	80.8 ± 8.4	610.9 ± 12.6	cubic	298	108.78	—	—	—	—
Re_2O_7	207.1 ± 0.8	1248.5 ± 10.5	orth	298	121.96	184.10	−9.41	—	—
			liq	570	297.48	—	—	—	62.8
ReS_2	60.7 ± 8.4	178.7 ± 12.6	hex	298	68.58	15.77	−6.57	—	—
Re_2S_7	167.4 ± 20.9	451.5 ± 16.7	tetrag	298	184.10	50.21	—	—	—
Re_5Si_3	255.9 ± 16.7	157.3 ± 62.8	tetrag	298	190.79	45.19	−14.06	—	—
ReSi	55.4 ± 4.2	52.7 ± 20.9	cubic	298	52.59	9.62	−3.77	—	—
$ReSi_2$	74.1 ± 6.7	90.4 ± 31.4	tetrag	298	67.78	11.05	−6.11	—	—
Rh	31.5	0.0	fcc	298	20.79	13.43	0.33	−2.26	—
			liq	2236	41.84	—	—	—	21.5
Rh(g)	185.7	−553.1	gas	298	21.17	6.40	−2.13	−1.46	—
$RhCl_3$	126.8 ± 14.6	280.3 ± 12.6	monocl	298	105.44	27.61	−19.08	—	—
Rh_2O_3	106.3 ± 8.4	355.6	rhomb	298	86.78	57.74	—	—	—
RhO(g)	229.7 ± 10.5	−410.0 ± 50.2	gas	298	37.87	—	−5.44	—	—
Rh_3S_4	182.0 ± 25.1	357.7	cryst	298	145.60	60.25	−10.67	—	—
Rh_2S_3	125.5 ± 20.9	262.8	cryst	298	110.25	32.97	−9.62	—	—
Ru	28.5	0.0	hcp	298	18.58	9.29	2.80	—	—
			liq	2523	41.84	—	—	—	24.3
Ru(g)	186.4	−651.4	gas	298	23.93	2.01	−2.72	—	—
$RuCl_3$	127.6 ± 10.5	253.1 ± 14.6	hex	298	115.06	—	—	—	—
$RuCl_3(g)$	397.5 ± 20.9	−56.1 ± 18.8	gas	298	56.90	7.66	−3.01	—	—
$RuCl_4(g)$	374.5 ± 20.9	93.3 ± 16.7	gas	298	95.81	—	−10.46	—	—
RuF_5	161.1 ± 14.6	892.9 ± 1.7	cryst	298	163.18	—	—	—	—
			liq	358	182.00	—	—	—	18.8
RuO_2	58.6 ± 4.6	305.0 ± 6.3	tetrag	298	69.87	10.46	−14.85	—	—
$RuO_4(g)$	290.7 ± 0.4	184.1 ± 5.0	gas	298	101.80	3.05	−24.02	—	—
RuS_2	54.4 ± 12.6	205.9 ± 20.9	cubic	298	68.53	11.84	−8.79	—	—
S	32.0 ± 0.1	0.0	orth	298	23.51	—	—	—	—
			monocl	368	24.73	—	—	—	0.4
			liq	388	35.19	—	—	—	1.7

TABLE I—*continued*

Substance	$S_{298} \pm \delta S$ (J/deg mol)	$-\Delta H_{298} \pm \delta H$ (kJ/mol)	Phase	T K	$C_p = A + BT + C/T^2 + DT^2$ A	$B \times 10^3$ (J/deg mol)	$C \times 10^{-5}$ (J/deg mol)	$D \times 10^6$ (J/deg mol)	H_t (kJ/mol)
S(g)	167.7	−277.2± 0.4	gas	298	22.01	−0.42	1.51	—	—
			gas	2400	20.75	0.42	2.51	—	—
S_2(g)	228.1	−128.6	gas	298	33.53	6.02	−2.37	−2.09	—
			gas	1000	34.62	3.67	−6.07	−0.43	—
S_3(g)	276.0	−146.4	gas	298	57.60	0.32	−6.33	—	—
S_4(g)	325.9	−188.3	gas	298	82.55	3.14	−7.11	—	—
			gas	718	82.42	3.14	−7.11	—	—
S_5(g)	320.9	−111.0	gas	298	106.48	0.85	−16.45	—	—
S_6(g)	353.9	−98.7	gas	298	131.75	0.67	−17.20	—	—
S_7(g)	394.1	−102.9	gas	298	155.91	1.09	−23.34	—	—
			gas	718	155.91	1.09	−23.34	—	—
S_8(g)	423.1	−96.8	gas	298	181.18	0.92	−22.79	—	—
S_2Cl_2	223.8± 4.2	58.2± 2.1	liq	298	124.26	—	—	—	—
S_2Cl_2(g)	327.2± 0.4	16.7± 4.2	gas	298	80.79	3.04	−7.76	—	—
SCl_2(g)	281.5± 0.4	17.6± 3.3	gas	298	57.53	0.36	−6.00	—	—
SF_5(g)	301.2± 8.4	908.3±15.9	gas	298	126.19	3.18	−33.47	—	—
SF_6(g)	291.6± 0.4	1220.5± 1.7	gas	298	146.69	5.90	−46.02	—	—
SO(g)	221.8± 0.2	− 5.0± 2.1	gas	298	33.35	2.85	−3.60	—	—
SO_2(g)	248.1	296.8	gas	298	49.96	4.77	−10.46	—	—
SO_3	122.6± 8.4	438.5± 0.8	liq	298	179.91	—	—	—	—
SO_3(g)	256.7± 0.2	395.8± 0.8	gas	298	70.00	6.61	−19.35	—	—
$SOCl_2$(g)	307.9± 0.4	212.3± 3.8	gas	298	74.27	7.20	−8.70	—	—
SO_2Cl_2(g)	311.0± 0.4	354.8± 2.1	gas	298	97.49	4.81	−19.46	—	—
SO_2F_2(g)	283.5± 0.4	758.6± 8.4	gas	298	96.02	5.69	−28.49	—	—
Sb	45.5	0.0	rhomb	298	23.05	7.28	—	—	—
			liq	904	31.38	—	—	—	19.9
Sb(g)	180.2	−264.6	gas	298	20.79	—	—	—	—
			gas	800	17.83	1.91	9.68	—	—
Sb_2(g)	254.8	−231.2	gas	298	37.36	0.04	−0.91	—	—
			gas	1300	37.28	0.06	—	—	—
			gas	1860	37.39	—	—	—	—
Sb_4(g)	350.0	−206.5	gas	298	82.91	0.17	−1.80	—	—
			gas	1300	82.81	0.14	—	—	—
			gas	1860	62.14	—	—	—	—

$SbBr_3$	210.0 ± 4.2	259.4 ± 14.6	orth	298	112.97	—	—	—	—
			liq	370	125.52	—	—	—	14.6
$SbBr_3(g)$	372.4 ± 0.8	180.7	gas	298	83.26	—	−2.68	—	—
$SbCl_3$	183.3 ± 3.8	381.2 ± 1.7	orth	298	43.10	225.94	—	—	—
			liq	346	123.85	—	—	—	13.0
$SbCl_3(g)$	338.5 ± 1.3	312.1 ± 3.3	gas	298	83.01	—	−4.98	—	—
$SbCl_5(g)$	401.7 ± 1.0	389.1 ± 5.4	gas	298	132.21	−9.83	—	—	—
SbF_3	127.2	915.5 ± 16.7	orth	298	107.11	—	—	—	—
			liq	564	127.61	—	—	—	21.3
$SbH_3(g)$	233.0 ± 0.4	145.1 ± 0.8	gas	298	50.50	18.70	−13.18	—	—
SbI_3	215.5 ± 1.7	100.4 ± 27.6	hex	298	71.13	88.70	—	—	—
			liq	443	143.51	—	—	—	17.6
Sb_2O_3	132.7 ± 4.2	716.1 ± 3.3	cubic	298	75.31	97.49	—	—	—
			orth	845	92.05	66.11	—	—	8.1
			liq	929	156.90	—	—	—	54.8
SbO_2	63.6 ± 4.2	453.5 ± 2.5	cubic	298	47.28	33.89	—	—	—
Sb_2O_5	125.1 ± 8.4	1007.5 ± 4.6	cubic	298	69.04	230.12	—	—	—
SbOCl	107.5 ± 9.2	380.7 ± 16.7	monocl	298	67.99	21.97	—	—	—
Sb_2S_3	107.53 ± 3.3	205.0	orth	298	101.84	60.54	—	—	—
			liq	823	167.36	—	—	—	47.9
Sb_2Se_3	212.1 ± 3.3	127.6 ± 1.3	orth	298	118.74	20.92	—	—	—
			liq	888	171.54	—	—	—	53.8
Sb_2Te_3	246.4 ± 3.3	56.5 ± 1.3	rhomb	298	112.88	53.14	—	—	—
			liq	892	196.65	—	—	—	99.0
Sc	34.8	0.0	hex	298	24.74	1.33	0.35	5.10	—
			cubic	1610	44.22	—	—	—	4.0
			liq	1814	44.35	—	—	—	14.1
Sc(g)	300.2	−379.1	gas	298	20.92	—	—	—	—
			gas	1600	28.12	−8.74	—	2.68	—
$ScCl_3$	121.3	918.8 ± 3.3	rhomb	298	95.65	15.40	−7.28	—	—
			liq	1240	143.43	—	—	—	67.4
ScF_3	89.1	1648.9 ± 8.4	hex	298	98.58	3.22	−13.16	—	—
			liq	1825	88.87	—	—	—	62.8
ScN	29.7 ± 4.2	313.8 ± 16.7	cubic	298	45.81	5.44	−9.20	—	—
Sc_2O_3	77.0 ± 0.4	1908.3 ± 3.3	cubic	298	99.79	22.22	−11.09	—	—
Se	42.3	0.0	hex	298	17.89	25.10	—	—	—
			liq	493	35.15	—	—	—	5.9
Se(g)	176.6	−235.4	gas	298	21.46	1.51	−0.92	—	—
$Se_2(g)$	246.9	−138.2	gas	298	44.60	−2.66	−2.50	—	—
$Se_3(g)$	314.9	−176.1	gas	298	58.15	3.04	−2.21	—	—
$Se_4(g)$	379.1	−183.3	gas	298	83.16	0.03	−2.51	—	—

TABLE I—*continued*

Substance	$S_{298} \pm \delta S$ (J/deg mol)	$-\Delta H_{298} \pm \delta H$ (kJ/mol)	Phase	T K	$C_p = A + BT + C/T^2 + DT^2$				H_t (kJ/mol)
					A	$B \times 10^3$ (J/deg mol)	$C \times 10^{-5}$ (J/deg mol)	$D \times 10^6$ (J/deg mol)	
$Se_5(g)$	385.3	−138.1	gas	298	107.93	0.09	−5.91	—	—
$Se_6(g)$	433.5	−135.1	gas	298	132.90	0.07	−5.92	—	—
$Se_2Cl_2(g)$	353.8	21.8 ± 8.4	gas	298	82.42	1.55	−4.52	—	—
$SeCl_2(g)$	295.6	33.5 ± 12.6	gas	298	57.95	0.13	−3.95	—	—
$SeCl_4$	194.6 ± 16.7	188.7 ± 6.3	monocl	298	133.89	—	—	—	—
$SeF_4(g)$	296.4	811.7 ± 41.8	gas	298	101.04	3.68	−27.53	—	—
$SeF_5(g)$	326.4	940.6 ± 14.6	gas	298	127.61	2.80	−29.29	—	—
$SeF_6(g)$	313.5 ± 0.8	1117.1 ± 1.3	gas	298	151.13	3.60	−37.40	—	—
$SeO(g)$	233.9	−62.3 ± 20.9	gas	298	34.94	1.51	−3.68	—	—
SeO_2	66.7 ± 1.7	225.1 ± 2.1	tetrag	298	69.58	3.89	−11.05	—	—
$SeO_2(g)$	264.8	107.9 ± 8.4	gas	298	52.84	3.10	−9.90	—	—
Si	18.8	0.0	diam	298	23.93	2.22	−4.14	—	—
			liq	1685	27.20	—	—	—	50.2
$Si(g)$	167.9	−450.0	gas	298	19.82	1.00	2.01	—	—
$Si_2(g)$	229.7	−585.8	gas	298	37.25	0.46	−0.28	—	—
$Si_3(g)$	267.8	−636.0	gas	298	61.99	0.13	−0.73	—	—
$SiBr_2(g)$	303.3 ± 2.1	42.7 ± 0.8	gas	298	57.78	—	−4.64	—	—
$SiBr_4$	278.2 ± 1.3	457.3 ± 8.4	liq	298	146.44	—	—	—	—
$SiBr_4(g)$	379.2 ± 0.8	415.5 ± 16.7	gas	298	107.40	0.31	−9.33	—	—
SiC	16.5 ± 0.2	66.9 ± 6.3	cubic	298	42.59	8.37	−16.61	−1.26	—
$SiCl_2(g)$	281.8 ± 4.2	167.4 ± 4.2	gas	298	57.57	0.38	−5.65	—	—
$SiCl_4(g)$	330.8 ± 0.4	662.7 ± 1.3	gas	298	106.52	0.75	−14.73	—	—
$SiF_2(g)$	256.5 ± 0.8	619.2	gas	298	54.76	1.91	−9.99	—	—
$SiF_4(g)$	282.6 ± 0.4	1615.0 ± 0.8	gas	298	91.46	13.26	−19.66	—	—
$SiH(g)$	197.9 ± 0.4	−368.2 ± 20.9	gas	298	28.33	4.84	—	—	—
			gas	700	30.29	3.65	—	—	—
$SiH_4(g)$	204.6 ± 0.2	−34.3 ± 2.1	gas	298	13.87	111.03	−0.49	−40.31	—
$Si_2H_6(g)$	274.3 ± 2.1	−80.3 ± 1.3	gas	298	53.93	136.40	−10.33	−44.77	—
$SiH_2Cl_2(g)$	286.6 ± 0.4	320.5 ± 12.6	gas	298	85.40	10.04	−23.64	—	—
$SiI_2(g)$	317.1 ± 2.5	−92.5 ± 8.4	gas	298	58.07	0.06	−3.08	—	—
SiI_4	258.2 ± 3.3	189.5 ± 16.7	cubic	298	81.96	87.45	—	—	—
			liq	394	147.49	41.30	—	—	19.7
$SiI_4(g)$	413.4 ± 1.3	125.1 ± 7.5	gas	298	106.98	1.00	−6.02	—	—

Si_3N_4	113.0 ± 8.4	744.8 ± 12.6	hex	298	76.36	109.04	−6.53	−27.07	—
SiO(g)	211.5 ± 0.4	98.3 ± 8.4	gas	298	29.83	8.24	−2.05	−2.28	—
SiO_2	41.5 ± 0.4	910.9 ± 1.7	α−qtz	298	43.93	38.83	−9.69	—	—
			β−qtz	847	58.91	10.04	—	—	0.7
SiO_2(cr)	43.4 ± 0.8	908.3 ± 1.7	α−cris	298	46.90	31.51	−10.08	—	—
			β−cris	540	71.63	1.88	−39.06	—	1.3
			liq	2000	86.19	—	—	—	9.6
$SiOF_2$(g)	271.2	966.5	gas	298	64.27	20.23	−14.64	−5.77	—
SiP	32.6 ± 9.6	61.9 ± 14.6	cryst	298	42.89	10.88	−5.65	—	—
SiS(g)	223.7 ± 2.1	−105.9 ± 12.6	gas	298	36.42	0.74	−4.04	—	—
SiS_2	80.3 ± 4.2	213.4 ± 20.9	orth	298	74.14	12.38	—	—	—
			liq	1363	91.00	—	—	—	20.9
SiSe(g)	235.1 ± 1.3	−202.9 ± 20.9	gas	298	36.74	0.42	−2.89	—	—
Sm	69.5	0.0	hcp	298	27.57	29.58	−5.61	−10.46	—
			bcc	1191	46.94	—	—	—	3.1
			liq	1346	50.21	—	—	—	8.6
Sm(g)	182.9	−206.7	gas	298	30.33	—	—	—	—
SmC_2	77.8 ± 8.4	97.9 ± 8.4	tetrag	298	68.62	11.30	−7.95	—	—
$SmCl_2$	127.6 ± 6.3	816.3 ± 8.4	cryst	298	77.40	16.74	—	—	—
$SmCl_2$(g)	315.5	500.4 ± 17.6	gas	298	65.19	−8.58	—	—	—
$SmCl_3$	113.0 ± 12.6	1028.4 ± 3.3	hex	298	82.26	47.70	0.75	—	—
Sm_2O_3	151.0 ± 0.4	1822.6 ± 3.3	monocl	298	128.66	19.41	−17.99	—	—
			monocl	1195	154.39	—	—	—	1.0
SmOCl	100.4 ± 12.6	1000.4 ± 10.0	tetrag	298	70.71	22.38	−5.73	—	—
SmS	81.2 ± 4.2	431.0 ± 41.8	cubic	298	59.33	3.18	−1.92	—	—
SmSe	94.1 ± 6.3	443.5 ± 6.3	cubic	298	59.83	3.22	−1.84	—	—
Sn	51.2	0.0	tetrag	298	21.59	18.16	—	—	—
			liq	505	32.84	−6.28	—	—	7.2
			liq	700	28.45	—	—	—	—
Sn(g)	168.4	−301.2	gas	298	8.31	31.51	3.16	—	—
			gas	500	−1.49	66.33	4.21	−32.18	—
			gas	1000	50.14	−10.73	−63.12	—	—
			gas	1400	29.20	−1.36	91.76	—	—
$SnBr_2$	149.8 ± 11.7	260.2 ± 6.7	cryst	298	114.64	33.05	—	—	—
			liq	505	99.58	—	—	—	18.0
$SnBr_4$(g)	405.0 ± 1.7	348.1	gas	298	107.91	—	−4.06	—	—
$SnCl_2$	131.8	331.0	rhomb	298	50.63	83.68	—	—	—
			liq	520	96.23	—	—	—	12.6
$SnCl_4$	259.0 ± 3.3	528.9 ± 14.6	liq	298	164.85	—	—	—	—
$SnCl_4$(g)	364.8 ± 1.3	489.1	gas	298	106.98	0.84	−7.82	—	—
SnH_4(g)	228.7 ± 0.4	−162.8 ± 2.1	gas	298	51.80	37.66	−11.30	—	—

TABLE I—*continued*

Substance	$S_{298} \pm \delta S$ (J/deg mol)	$-\Delta H_{298} \pm \delta H$ (kJ/mol)	Phase	T K	$C_p = A + BT + C/T^2 + DT^2$ A	$B \times 10^3$ (J/deg mol)	$C \times 10^{-5}$ (J/deg mol)	$D \times 10^6$ (J/deg mol)	H_t (kJ/mol)
SnI_2	164.8	152.1 ± 3.3	cryst	298	70.29	29.29	—	—	—
			liq	593	94.56	—	—	—	18.8
$SnI_2(g)$	344.8 ± 1.7	− 0.8	gas	298	61.92	—	−4.60	—	—
SnI_4	270.3	206.3 ± 5.0	cubic	298	147.28	—	—	—	—
			liq	418	162.34	—	—	—	19.2
$SnI_4(g)$	446.4 ± 1.7	112.2	gas	298	108.37	—	−2.64	—	—
SnO	57.2 ± 0.4	280.7 ± 0.8	tetrag	298	39.96	14.64	—	—	—
SnO(g)	232.0 ± 0.2	−20.9 ± 9.6	gas	298	35.23	1.34	−3.51	—	—
SnO_2	52.3 ± 1.3	577.6 ± 0.4	tetrag	298	73.89	10.04	−21.59	—	—
$Sn(NO_3)_2$	208.8 ± 9.2	456.1 ± 18.8	cryst	298	209.20	—	—	—	—
SnS	77.0 ± 0.8	107.9 ± 2.1	orth	298	35.69	31.30	−3.77	—	—
			orth	875	32.55	15.65	—	—	0.7
			liq	1153	74.89	—	—	—	31.6
SnS(g)	242.3 ± 0.8	−112.5 ± 4.2	gas	298	36.94	0.33	−2.30	—	—
Sn_3S_4	243.5 ± 16.7	370.3 ± 20.9	tetrag	298	150.96	62.34	—	—	—
Sn_2S_3	164.4	263.6 ± 20.9	orth	298	107.03	43.93	—	—	—
SnS_2	87.4 ± 0.8	153.6	hex	298	64.89	17.57	—	—	—
$SnSO_4$	138.6 ± 0.8	1014.6 ± 31.4	rhomb	298	118.20	108.78	—	—	—
SnSe	98.1	94.1 ± 3.8	orth	298	46.65	19.96	—	—	—
SnSe(g)	255.2 ± 1.3	−120.9 ± 5.0	gas	298	37.36	—	−1.30	—	—
$SnSe_2$	118.0	124.7 ± 8.4	hex	298	62.05	31.63	—	—	—
SnTe	98.7	60.7 ± 0.8	cubic	298	48.95	10.13	—	—	—
			liq	1079	63.60	—	—	—	45.2
Sr	52.3	0.0	fcc	298	27.70	−3.68	−1.38	19.20	—
			bcc	820	37.66	—	—	—	0.8
			liq	1042	35.15	—	—	—	8.2
Sr(g)	164.5	−164.0	gas	298	20.79	—	—	—	—
$SrBr_2$	143.5 ± 4.2	718.0 ± 1.7	α	298	75.10	13.47	—	—	—
			β	918	115.06	—	—	—	12.2
			liq	930	116.40	—	—	—	10.1
$SrBr_2(g)$	323.4 ± 8.4	407.1 ± 12.6	gas	298	62.34	8.74	−1.30	−0.08	—
SrC_2	71.1 ± 8.4	84.5 ± 16.7	tetrag	298	68.62	11.30	−7.95	—	—
$SrCl_2$	114.8 ± 0.2	828.9 ± 2.5	cubic	298	113.72	−99.70	−14.90	92.88	—
			β	1000	123.01	—	—	—	6.0
			liq	1147	104.60	—	—	—	16.2

$SrCl_2(g)$	316.2± 5.0	473.2± 6.3	gas	298	58.16	20.04	−2.13	−0.21	—
SrF_2	82.1	1217.1± 2.9	cubic	298	69.37	16.07	−3.47	−0.59	—
			cubic	1475	69.37	16.07	−3.47	−0.59	23.7
			liq	1750	99.04	—	—	—	29.7
$SrF_2(g)$	291.6± 2.1	766.1± 4.2	gas	298	57.99	0.08	−4.52	—	—
SrH_2	49.8± 6.7	179.9± 5.9	cryst	298	33.47	22.59	—	—	—
SrI_2	159.1± 0.8	561.5± 2.1	cryst	298	69.83	27.41	−0.05	—	—
			liq	811	110.04	—	—	—	19.7
$SrI_2(g)$	339.4± 8.4	274.9± 6.3	gas	298	62.34	0.02	−0.84	—	—
SrO	55.5± 0.4	592.0± 3.8	cubic	298	50.75	6.07	−6.28	—	—
SrO(g)	230.0± 0.4	13.4±16.7	gas	298	36.40	0.67	−3.10	—	—
SrO_2	59.0±10.0	633.5±15.1	tetrag	298	73.97	18.41	—	—	—
$SrAl_2O_4$	108.8±20.9	2338.9±16.7	α	298	177.19	4.94	−53.01	—	—
			β	932	146.11	29.29	—	—	1.9
SrB_4O_7	144.3± 6.3	3332.6±26.8	ortho	298	165.69	142.26	−35.69	—	139.7
$SrCO_3$	97.1± 1.7	1220.1± 8.4	orth	298	88.78	35.90	−15.48	—	—
			hex	1197	142.26	—	—	—	19.7
$Sr(OH)_2$	97.1± 8.4	968.9± 9.2	cryst	298	35.23	133.05	—	—	—
$SrHfO_3$	113.0±12.1	1783.6±12.1	monocl	298	122.17	13.81	−19.87	—	—
$SrMoO_4$	128.9± 5.0	1549.3±10.0	tetrag	298	134.14	29.37	−23.01	—	—
SrS	68.2± 2.9	452.7±16.3	cubic	298	54.31	5.27	−6.49	—	—
$SrSO_4$	117.2± 8.4	1453.1±17.6	celest	298	91.21	55.65	—	—	—
Sr_2SiO_4	149.8± 8.4	2302.9± 3.3	cryst	298	154.39	31.38	−31.38	—	—
$SrSiO_3$	96.2± 8.4	1633.4± 3.8	cryst	298	116.73	11.09	−29.29	—	—
Sr_2TiO_4	159.0	2287.8± 9.6	tetrag	298	160.87	16.07	−19.54	—	—
$SrTiO_3$	108.4± 1.3	1670.7± 7.9	cubic	298	118.11	8.54	−19.16	—	—
$SrWO_4$	133.9± 5.0	1621.3±20.5	cryst	298	120.67	36.11	—	—	—
$SrZrO_3$	108.8± 8.4	1767.3±14.6	cryst	298	121.25	12.22	−21.42	—	—
Ta	41.5	0.0	bcc	298	23.77	7.41	−0.42	−2.72	—
			bcc	1400	47.82	−22.34	—	6.57	—
			liq	3293	41.84	—	—	—	33.9
Ta(g)	185.1	−781.6	gas	298	17.95	11.21	−0.56	−1.72	—
TaB_2	46.0± 4.2	209.2	hex	298	59.45	18.83	−15.06	—	—
			liq	3250	125.52	—	—	—	83.7
$TaBr_5$	303.3±18.8	598.3± 6.3	orth	298	119.16	122.59	—	—	—
			liq	543	184.10	—	—	—	47.3
Ta_2C	81.6± 4.2	208.4± 9.2	hex	298	66.44	13.93	−8.58	—	—
TaC	42.3± 0.4	142.7± 3.8	cubic	298	43.30	8.16	−7.95	—	—
			liq	4100	66.94	—	—	—	104.6
$TaCl_3$	154.8± 8.4	552.3± 3.8	cubic	298	96.23	16.32	−7.11	—	—

TABLE I—*continued*

Substance	$S_{298} \pm \delta S$ (J/deg mol)	$-\Delta H_{298} \pm \delta H$ (kJ/mol)	Phase	T K	$C_p = A + BT + C/T^2 + DT^2$				H_t (kJ/mol)
					A	$B \times 10^3$	$C \times 10^{-5}$	$D \times 10^6$	
					(J/deg mol)				
$TaCl_4$	192.5± 8.4	705.0± 4.6	monocl	298	133.47	—	−12.13	—	—
$TaCl_4$(g)	382.8±10.5	566.9± 8.8	gas	298	107.95	—	−8.37	—	—
$TaCl_5$	221.8± 6.3	859.0± 4.2	monocl	298	147.90	—	—	—	—
			liq	490	180.75	—	—	—	35.1
$TaCl_5$(g)	412.9± 3.3	764.8± 8.4	gas	298	132.51	0.27	−11.09	—	—
$TaCr_2$	88.1± 0.6	27.0± 2.5	cubic	298	73.85	22.80	−7.20	—	—
TaF_5	169.9±15.9	1903.7± 2.1	monocl	298	133.89	—	—	—	—
			liq	369	177.82	—	—	—	12.6
TaF_5(g)	352.9±16.7	1820.0±16.7	gas	298	130.67	1.09	−24.69	—	—
$TaFe_2$	106.7± 5.4	57.7± 7.5	hex	298	66.94	26.36	—	—	—
Ta_2N	74.5± 9.2	272.4± 5.0	hex	298	70.50	17.66	−7.11	—	—
TaN	41.8± 1.3	252.3± 2.5	cubic	298	55.27	2.72	−12.64	—	—
			liq	3360	62.76	—	—	—	66.9
TaO_2(g)	279.5± 1.7	184.1±20.9	gas	298	54.81	0.17	−10.13	—	—
Ta_2O_5	143.1± 1.3	2046.4± 4.2	orth	298	161.29	21.42	−29.20	—	—
			liq	2058	242.67	—	—	—	120.1
TaS_2	75.3	354.0±16.7	hex	298	69.87	—	—	—	—
Ta_5Si_3	280.7±26.8	334.7±33.5	tetrag	298	179.70	39.12	−8.91	—	—
$TaSi_2$	75.3± 6.3	119.2±12.6	hex	298	73.26	7.70	−9.08	—	—
Tb	73.3	0.0	hcp	298	16.78	18.70	6.02	—	—
			bcc	1591	27.74	—	—	—	5.0
			liq	1633	46.44	—	—	—	10.8
Tb(g)	203.1	−388.7	gas	298	25.46	−2.85	—	—	—
			gas	500	19.50	5.87	4.15	—	—
			gas	1000	21.23	6.50	−9.08	−1.07	—
TbF_3	90.4± 1.3	1707.9± 5.0	orth	298	97.82	19.66	−12.07	—	—
$TbCl_3$	147.7± 7.5	998.7± 3.3	orth	298	94.10	25.75	−3.10	—	—
			orth	783	123.93	—	—	—	14.2
			liq	855	144.47	—	—	—	19.5
Tb_2O_3	156.9± 8.4	1865.2± 7.5	cubic	298	108.78	41.42	−8.37	—	—
TbO_2	82.8	971.5± 3.8	cubic	298	64.81	17.70	−7.59	—	—
Te	49.5	0.0	hex	298	19.16	21.97	—	—	—
			liq	723	37.66	—	—	—	17.5
Te(g)	182.6	−211.7	gas	298	19.41	1.84	0.75	—	—

$Te_2(g)$	260.6	−159.1	gas	298	34.64	6.61	−0.26	—	—
$TeCl_4$	200.8 ± 20.9	323.8	cryst	298	138.49	—	—	—	—
			liq	497	230.12	—	—	—	18.9
$TeCl_4(g)$	376.6 ± 20.9	205.9 ± 20.9	gas	298	96.71	0.15	−5.49	—	—
$TeF_4(g)$	324.1 ± 12.6	948.1	gas	298	104.14	2.08	−20.13	—	—
$TeF_6(g)$	335.9 ± 1.7	1369.0 ± 0.8	gas	298	152.08	3.10	−31.71	—	—
$TeO(g)$	240.6 ± 0.8	−74.5	gas	298	35.31	1.34	−34.73	—	—
TeO_2	70.1 ± 0.8	316.3 ± 2.1	tetrag	298	65.19	15.06	−7.95	—	—
			liq	1004	112.63	2.18	—	—	29.1
$TeO_2(g)$	274.9 ± 4.2	52.3 ± 8.4	gas	298	54.77	2.43	−11.84	—	—
Th	53.4	0.0	fcc	298	25.10	8.37	−0.23	−0.22	—
			bcc	1633	15.69	11.97	—	—	3.6
			liq	2028	46.02	—	—	—	13.8
Th(g)	190.0	−597.1	gas	298	8.62	21.21	5.86	−3.20	—
$ThBr_4$	228.0 ± 6.3	965.7 ± 6.3	orth	298	127.61	15.06	−6.15	—	—
			tetrag	693	127.61	15.06	−6.15	—	4.2
			liq	952	171.54	—	—	—	54.4
$ThBr_4(g)$	429.7 ± 12.6	766.5 ± 10.5	gas	298	110.16	—	−5.02	—	—
ThC	58.0 ± 0.8	126.4 ± 10.5	cubic	298	42.89	7.36	—	—	—
ThC_2	68.7 ± 0.4	122.2 ± 6.3	monocl	298	63.89	12.09	−9.25	—	—
			monocl	1700	83.68	—	—	—	6.3
			cubic	1763	83.68	—	—	—	6.3
$ThCl_4$	190.4 ± 5.0	1186.6 ± 2.9	orth	298	120.29	23.26	−6.15	—	—
			tetrag	679	120.29	23.26	−6.15	—	5.0
			liq	1043	163.18	—	—	—	61.5
$ThCl_4(g)$	390.8 ± 8.4	974.9 ± 9.2	gas	298	108.07	—	−6.15	—	—
ThF_4	142.0 ± 0.4	2111.2 ± 8.4	monocl	298	111.92	24.48	−7.55	—	—
			liq	1383	152.72	—	—	—	43.9
$ThF_4(g)$	341.8 ± 10.5	1775.3 ± 11.7	gas	298	108.37	—	−13.60	—	—
ThH_2	59.4 ± 4.2	143.5 ± 4.2	bctet	298	52.76	11.09	—	—	—
ThI_4	265.7 ± 10.5	664.4 ± 5.9	monocl	298	140.16	12.97	−6.15	—	—
			liq	839	177.40	—	—	—	48.1
$ThI_4(g)$	472.0 ± 10.5	469.4	gas	298	108.11	—	−1.30	—	—
ThN	57.3 ± 1.3	378.7 ± 10.5	cubic	298	48.12	9.41	−5.86	—	—
Th_3N_4	182.8 ± 2.1	1305.4 ± 20.9	hex	298	164.56	26.11	−22.30	—	—
$ThO(g)$	240.0 ± 0.4	28.5 ± 2.1	gas	298	37.91	—	−5.98	—	—
ThO_2	65.2 ± 0.4	1226.7 ± 1.3	cubic	298	69.29	9.33	−9.18	—	—
$ThOBr_2$	131.0 ± 10.5	1129.7 ± 12.6	cryst	298	98.45	12.22	−7.66	—	—
$ThOCl_2$	113.6 ± 7.9	1236.0 ± 5.0	orth	298	98.32	11.21	−9.25	—	—
$ThOI_2$	158.6 ± 6.3	992.4 ± 5.0	cryst	298	99.50	11.13	−7.70	—	—
Th_2N_2O	124.3 ± 6.3	1288.7 ± 25.1	hex	298	116.90	18.74	−15.73	—	—

TABLE I—*continued*

Substance	$S_{298} \pm \delta S$ (J/deg mol)	$-\Delta H_{298} \pm \delta H$ (kJ/mol)	Phase	T K	$C_p = A + BT + C/T^2 + DT^2$				H_t (kJ/mol)
					A	$B \times 10^3$ (J/deg mol)	$C \times 10^{-5}$ (J/deg mol)	$D \times 10^6$ (J/deg mol)	
$ThRe_2$	123.6± 5.0	174.1± 5.0	hex	298	70.96	23.56	—	—	—
Th_7Rh_3	389.1	757.3	hex	298	247.27	81.59	−5.19	—	—
ThRh	64.9	232.6± 6.3	orth	298	40.00	16.82	−1.05	—	—
$ThRh_3$	120.9	321.7±10.5	cubic	298	77.49	34.81	−2.13	—	—
$ThRh_5$	199.8	316.7±12.6	cryst	298	114.93	52.80	−3.22	—	—
ThRu	61.3	121.8± 7.5	orth	298	43.05	10.88	—	—	—
Th_7Ru_3	378.7	505.4	hex	298	198.74	77.40	—	—	—
ThS	69.8± 0.4	399.6± 6.3	cubic	298	50.12	5.46	−3.59	—	—
Th_2S_3	171.5±11.7	1083.2±12.6	orth	298	121.96	15.06	−3.77	—	—
ThS_2	96.2± 0.8	627.6±33.5	orth	298	67.03	11.00	—	—	—
$Th(SO_4)_2$	165.3±20.9	2541.4±20.9	cryst	298	104.60	230.96	—	—	—
Th_3Si_2	163.2±12.6	284.9±20.9	tetrag	298	124.26	28.45	−9.79	—	—
ThSi	58.2±12.6	128.0±12.6	orth	298	49.41	10.29	−4.64	—	—
Th_3Si_5	213.4±20.9	486.2±37.7	hex	298	196.10	35.82	−22.26	—	—
$ThSi_2$	82.0± 8.4	174.1±16.7	hex	298	73.35	12.76	−8.79	—	—
Ti	30.7	0.0	hex	298	24.94	6.57	−1.63	1.34	—
			bcc	1155	30.84	−8.87	—	6.44	4.2
			liq	1943	41.84	—	—	—	16.7
Ti(g)	180.2	−473.6	gas	298	22.26	−3.26	2.76	2.13	—
TiB	34.7	160.2±16.7	orth	298	54.06	−0.04	−21.63	—	—
TiB_2	28.5± 0.4	315.9± 7.5	hex	298	56.38	25.86	−17.47	−3.35	—
			liq	3498	108.78	—	—	—	108.8
$TiBr_2$	108.4	405.4	trigon	298	76.09	10.75	−0.51	—	—
$TiBr_2(g)$	308.8	179.1	gas	298	60.28	2.13	−0.62	—	—
$TiBr_3$	176.6	551.9± 6.7	trigon	298	−10.79	284.34	34.18	−119.2	—
$TiBr_3(g)$	359.0	376.6	gas	298	88.20	−1.20	−7.49	—	—
$TiBr_4$	243.5	619.7± 2.1	cubic	298	80.92	169.62	—	—	—
			liq	311	151.88	—	—	—	12.9
$TiBr_4(g)$	398.5	551.5	gas	298	107.76	0.17	−6.36	—	—
TiC	24.7± 0.4	184.5± 4.6	cubic	298	48.43	3.16	−1.36	1.23	—
$TiCl_2(g)$	87.4±12.6	515.5±16.7	gas	298	60.12	2.22	−2.76	—	—
$TiCl_3$	139.7± 1.3	721.7± 5.0	trigon	298	95.81	11.05	−1.80	—	—
$TiCl_3(g)$	316.7± 4.2	539.3± 6.3	gas	298	87.24	−0.71	−12.93	—	—

Ti_2Cl_6(g)	482.0±16.7	1248.1±16.7	gas	298	182.59	0.21	−11.55	—	—
$TiCl_4$	252.4± 0.8	804.2± 1.3	liq	298	142.80	8.70	−0.17	—	—
$TiCl_4$(g)	353.1± 4.2	763.2± 3.8	gas	298	107.19	0.47	−10.54	—	—
$TiCr_2$	86.5	− 0.3	cubic	298	72.43	24.77	−6.90	—	—
TiF_4	134.0	1649.3± 3.8	cryst	298	123.30	36.23	−17.64	—	—
TiF_4(g)	314.8± 2.1	1551.4± 4.2	gas	298	104.27	1.98	−18.04	—	—
TiI_4	246.0± 6.7	377.4± 3.3	α	298	78.24	158.99	—	—	—
			cubic	379	148.11	—	—	—	9.9
			liq	428	156.48	—	—	—	19.8
TiN	30.3	338.1	cubic	298	49.83	3.93	−12.38	—	—
TiO	34.7± 2.1	542.7±12.6	monocl	298	44.22	15.06	−7.78	—	—
			cubic	1265	49.58	12.55	—	—	3.4
Ti_2O_3	77.2± 0.4	1520.9± 8.4	trigon	298	31.80	213.38	—	—	—
			β	470	147.70	3.43	−47.51	—	1.1
Ti_3O_5	129.4± 1.7	2459.1± 4.2	monocl	298	231.04	−24.77	−61.25	—	—
			orth	450	158.99	50.21	—	—	13.1
TiO_2	50.6± 0.4	944.0± 0.8	rutile	298	73.35	3.05	−17.03	—	—
TiO_2(a)	49.9± 0.4	941.4± 2.9	anatas	298	76.36	0.84	−20.08	—	—
TiOCl(g)	263.6	244.3	gas	298	60.50	0.96	−8.37	—	—
$TiOCl_2$(g)	320.9	545.6	gas	298	81.46	0.88	−8.93	—	—
TiOF(g)	250.6	433.0	gas	298	59.73	1.35	−10.74	—	—
$TiOF_2$(g)	284.5	924.7	gas	298	79.98	1.63	−16.18	—	—
TiS	56.5± 8.4	272.0±29.3	hex	298	45.90	7.36	—	—	—
TiS(g)	246.4± 2.1	−330.5	gas	298	36.99	0.22	−2.95	—	—
TiS_2	78.2± 6.3	407.1±33.5	hex	298	33.81	114.39	—	—	—
			hex	420	62.72	21.51	—	—	—
Ti_5Si_3	218.0±14.2	579.5±58.6	hex	298	196.44	44.77	−20.08	—	—
TiSi	49.0± 7.5	129.7±14.6	orth	298	48.12	11.42	−5.44	—	—
$TiSi_2$	61.1± 9.2	133.9±20.9	orth	298	70.42	17.57	−9.04	—	—
Tl	64.2	0.0	hcp	298	15.65	25.27	2.80	—	—
			β	507	20.92	20.92	—	—	0.4
			liq	577	30.12	—	—	—	4.3
Tl(g)	180.8	−181.0	gas	298	20.79	—	—	—	—
			gas	700	23.60	−4.56	−3.17	2.08	—
TlBr	122.6± 0.4	172.7± 0.8	cubic	298	46.32	20.71	—	—	—
			liq	733	105.65	−37.82	—	—	16.4
TlCl	111.5± 0.4	204.2± 1.7	cubic	298	46.02	16.74	—	—	—
			liq	702	59.41	—	—	—	15.9
TlF	95.7± 0.4	325.5± 4.6	rhomb	298	54.81	—	—	—	—
			tetrag	356	55.44	—	—	—	0.4
			liq	595	67.28	—	—	—	13.9

TABLE I—*continued*

Substance	$S_{298} \pm \delta S$ (J/deg mol)	$-\Delta H_{298} \pm \delta H$ (kJ/mol)	Phase	T K	$C_p = A + BT + C/T^2 + DT^2$ A	$B \times 10^3$ (J/deg mol)	$C \times 10^{-5}$ (J/deg mol)	$D \times 10^6$ (J/deg mol)	H_t (kJ/mol)
TlI	127.7 ± 0.4	123.7 ± 1.3	rhomb	298	49.25	13.47	—	—	—
			cubic	451	32.30	47.11	—	—	0.8
			liq	715	71.96	—	—	—	14.7
TlI(g)	276.6 ± 1.3	−18.6	gas	298	38.62	—	−2.09	—	—
Tl_2O	134.3 ± 11.3	167.4 ± 7.5	hex	298	56.07	41.84	—	—	—
			liq	852	94.98	—	—	—	30.3
Tl_2O_3	137.2 ± 13.8	390.4 ± 5.9	cubic	298	131.88	3.56	−22.26	—	—
Tl_2S	159.0 ± 12.6	95.0 ± 4.6	hex	298	71.55	29.29	—	—	—
			liq	730	99.58	—	—	—	23.0
Tl_2SO_4	200.8 ± 13.8	933.7 ± 0.8	orth	298	100.42	125.52	—	—	—
			liq	905	205.02	—	—	—	23.8
Tl_2Se	173.6 ± 7.5	93.3 ± 2.1	tetrag	298	69.75	32.64	—	—	—
TlSe	102.9 ± 1.7	61.1 ± 1.0	tetrag	298	39.33	35.15	—	—	—
Tl_2Te	174.1 ± 12.6	80.3 ± 5.4	cryst	298	67.99	27.20	—	—	—
Tm	74.0	0.0	hcp	298	19.83	13.01	3.22	−1.88	—
			bcc	1780	37.24	—	—	—	—
			liq	1818	41.42	—	—	—	16.9
Tm(g)	190.0	−232.2	gas	298	20.79	—	—	—	—
			gas	900	22.52	−2.24	−3.18	0.83	—
$TmCl_3$	147.3 ± 11.7	988.3 ± 2.5	monocl	298	95.60	11.72	−1.26	—	—
			liq	1101	148.53	—	—	—	34.9
TmF_3	95.0 ± 1.3	1694.5	orth	298	100.12	10.50	−16.40	—	—
			hex	1325	97.86	—	—	—	30.3
			liq	1431	140.33	—	—	—	28.9
Tm_2O_3	139.7 ± 0.4	1888.7 ± 5.9	cubic	298	129.70	3.26	−14.31	—	—
			cubic	1680	133.89	—	—	—	1.3
U	50.2	0.0	orth	298	25.10	2.38	—	23.68	—
			tetrag	941	42.93	—	—	—	2.8
			cubic	1049	38.28	—	—	—	4.8
			liq	1408	48.66	—	—	—	9.2
U(g)	199.7	−531.4	gas	298	16.74	6.32	4.98	1.55	—
UAl_2	97.5 ± 10.5	98.7 ± 5.4	cubic	298	75.31	10.46	—	—	—
UAl_3	136.0	114.2 ± 16.7	cubic	298	100.42	13.39	—	—	—
UAl_4	145.6 ± 12.6	130.5 ± 16.7	tetrag	298	119.24	33.47	—	—	—

UAs_2	206.7 ± 0.4	251.0 ± 12.6	tetrag	298	79.96	—	—	—	—
UB_2	55.1 ± 0.4	147.7 ± 12.6	hex	298	107.03	−40.25	−35.48	24.52	—
UB_4	71.1 ± 8.4	245.6 ± 20.9	tetrag	298	112.13	29.08	−37.24	—	—
UB_{12}	139.7	433.0	tetrag	298	308.57	15.31	−1.28	—	—
UBr_4	236.4 ± 10.5	802.1 ± 10.5	monocl	298	136.82	20.50	−11.30	—	—
			liq	792	163.18	—	—	—	55.2
UC	59.0 ± 0.6	97.5 ± 3.8	cubic	298	143.59	−1.26	−8.70	4.39	—
U_2C_3	138.4 ± 0.4	181.6 ± 7.5	cubic	298	125.10	12.80	−15.52	—	—
UC_2	68.8 ± 1.0	88.3 ± 5.0	tetrag	298	69.04	8.54	−9.41	—	—
			cubic	2038	123.01	—	—	—	10.9
UCl_3	159.0 ± 0.8	861.9 ± 3.3	hex	298	87.03	32.43	4.39	—	—
			liq	1114	129.70	—	—	—	46.4
$UCl_3(g)$	356.9	569.0 ± 16.7	gas	298	91.00	—	−9.62	—	—
UCl_4	197.3 ± 0.8	1018.8 ± 2.1	tetrag	298	113.80	35.86	−3.31	—	—
			liq	863	162.34	—	—	—	50.0
$UCl_4(g)$	389.9 ± 6.3	828.4 ± 7.1	gas	298	112.97	—	−9.04	—	—
U_2Cl_8	623.8 ± 25.1	1778.6 ± 25.1	gas	298	248.53	—	−19.87	—	—
UCl_5	246.9 ± 10.5	1041.4 ± 2.1	monocl	298	140.04	35.44	−5.36	—	—
			liq	600	186.69	—	—	—	35.6
$U_2Cl_{10}(g)$	633.0 ± 10.5	1960.2	gas	298	287.44	—	−28.87	—	—
UCl_6	285.8 ± 1.7	1068.2 ± 2.1	hex	298	173.43	35.06	−7.41	—	—
			liq	451	213.97	—	—	—	20.9
$UCl_6(g)$	432.6	987.8 ± 8.4	gas	298	158.03	—	−12.34	—	—
UF_3	117.2 ± 8.4	1507.1 ± 3.8	hex	298	85.77	31.38	1.05	—	—
$UF_3(g)$	331.8 ± 4.2	1036.8 ± 25.1	gas	298	83.68	—	−8.66	—	—
UF_4	151.7 ± 0.4	1919.6 ± 4.6	monocl	298	107.53	29.29	−0.25	—	—
			β	1118	150.21	—	—	—	16.3
			liq	1309	165.27	—	—	—	30.7
$UF_4(g)$	349.4 ± 8.4	1600.4	gas	298	110.88	—	−18.12	—	—
UF_5	188.3 ± 12.6	2072.3 ± 5.0	tetrag	298	125.52	30.21	−1.97	—	—
			liq	621	166.61	—	—	—	46.9
$UF_5(g)$	377.0 ± 8.4	1937.2 ± 20.9	gas	298	126.78	—	−15.48	—	—
UF_6	227.8 ± 0.6	2197.9 ± 3.3	orth	298	52.72	384.93	—	—	—
			liq	337	198.32	—	—	—	19.2
$UF_6(g)$	376.6 ± 4.2	2148.1 ± 2.5	gas	298	151.04	5.44	−20.38	—	—
UFe_2	104.6	32.2 ± 1.3	cubic	298	69.87	29.29	—	—	—
			liq	1502	138.07	—	—	—	67.8
UH_3	63.7 ± 0.4	127.0 ± 0.4	cubic	298	30.38	42.34	5.65	—	—
UI_4	265.7 ± 16.7	510.4 ± 8.4	cryst	298	149.37	9.96	−15.90	—	—
			liq	793	165.69	—	—	—	23.6
UN	62.5 ± 0.4	294.6 ± 5.0	cubic	298	55.73	4.98	−8.79	—	—

TABLE I—*continued*

Substance	$S_{298} \pm \delta S$ (J/deg mol)	$-\Delta H_{298} \pm \delta H$ (kJ/mol)	Phase	T K	$C_p = A + BT + C/T^2 + DT^2$				H_t (kJ/mol)
					A	$B \times 10^3$ (J/deg mol)	$C \times 10^{-5}$	$D \times 10^6$	
UO_2	77.0	1085.0	cubic	298	80.33	6.78	−16.57	—	—
U_4O_9	334.1 ± 0.6	4510.4 ± 7.1	cubic	298	356.27	35.44	−66.40	—	—
U_3O_8	282.5 ± 0.5	3574.8 ± 2.5	orth	298	282.42	36.94	−49.96	—	—
UO_3	96.2 ± 0.4	1223.8 ± 1.3	monocl	298	93.30	10.88	−10.88	—	—
$UOBr_2$	157.6 ± 0.4	977.8 ± 8.4	cryst	298	110.58	13.68	−14.85	—	—
$UOBr_3$	205.0 ± 16.7	947.7 ± 16.7	cryst	298	130.54	20.50	−13.81	—	—
UO_2Br_2	169.5 ± 12.6	1132.6 ± 12.6	cryst	298	117.95	17.53	−10.71	—	—
UOCl	102.5 ± 8.4	833.9 ± 4.2	cryst	298	75.81	14.35	−8.28	—	—
$UOCl_2$	138.3 ± 0.4	1069.4 ± 2.7	orth	298	98.95	14.64	−7.41	—	—
$U_2O_5Cl_5$	326.4 ± 8.4	2197.4 ± 4.2	cryst	298	234.30	35.56	−22.68	—	—
$UOCl_3$	169.9 ± 8.4	1140.1 ± 9.2	cryst	298	122.59	20.92	−11.92	—	—
UO_2Cl	112.5 ± 8.4	1169.4 ± 8.4	cryst	298	90.12	22.26	−7.74	—	—
$(UO_2)_2Cl_3$	276.1 ± 8.4	2404.5 ± 2.1	cryst	298	225.94	35.56	−29.29	—	—
UO_2Cl_2	150.6 ± 0.4	1242.6 ± 1.3	orth	298	115.23	18.20	−11.42	—	—
			liq	851	159.83	—	—	—	44.1
$UO_2Cl_2(g)$	372.4	972.8	gas	298	102.42	3.59	−13.22	—	—
UO_2F_2	135.6 ± 0.4	1651.4 ± 2.1	hex	298	122.93	8.62	−19.87	—	—
UP	78.2 ± 0.6	262.3 ± 12.6	cubic	298	57.36	−5.77	−5.44	8.79	—
US	78.0 ± 0.4	318.0 ± 6.7	cubic	298	52.84	6.53	−3.79	—	—
US_2	110.4 ± 0.4	526.3 ± 6.3	hex	298	71.80	9.62	—	—	—
US_3	138.5 ± 0.4	548.1 ± 33.5	monocl	298	95.60	—	—	—	—
UO_2SO_4	154.8 ± 8.4	1845.1 ± 2.1	orth	298	112.47	108.78	—	—	—
USe	96.5 ± 0.4	275.7 ± 14.6	cubic	298	52.89	6.40	—	—	—
U_3Si	173.8 ± 0.8	134.7 ± 16.7	tetrag	298	142.97	—	−31.38	—	—
U_3Si_2	197.5 ± 8.4	170.7 ± 6.3	tetrag	298	169.37	2.43	−35.19	—	—
USi	66.5 ± 4.2	83.7 ± 4.2	cubic	298	64.56	1.63	−13.01	—	—
USi_2	82.0 ± 5.0	129.7 ± 2.5	tetrag	298	89.62	4.06	−16.82	—	—
USi_3	106.3 ± 6.3	130.5 ± 2.9	cubic	298	113.18	6.44	−20.67	—	—
V	30.9	0.0	bcc	298	24.14	6.19	−1.38	−0.71	—
			bcc	900	25.90	−0.13	—	4.08	—
			liq	2183	47.28	—	—	—	23.0
V(g)	182.2	−514.2	gas	298	25.10	—	—	—	—
VBr_2	125.5 ± 12.6	364.4 ± 25.1	hex	298	73.64	12.55	—	—	—
VBr_3	142.3 ± 12.6	446.0 ± 25.1	hex	298	92.05	32.22	—	—	—

$VBr_4(g)$	334.7 ± 16.7	351.5 ± 33.5	gas	298	107.74	0.84	−7.32	—	—
$VC_{0.88}$	25.1 ± 0.8	101.9 ± 2.1	cubic	298	36.36	13.31	−7.11	—	—
VCl_2	97.1 ± 1.3	461.5 ± 8.4	hex	298	72.17	11.38	−2.97	—	—
VCl_3	131.0 ± 1.7	581.2 ± 2.1	hex	298	96.23	16.40	−7.03	—	—
VCl_4	257.4 ± 2.1	569.9 ± 2.5	liq	298	161.71	—	—	—	—
$VCl_4(g)$	366.1	525.9	gas	298	99.16	8.37	−5.44	—	—
VF_4	121.3 ± 11.3	1403.3 ± 16.7	hex	298	95.19	39.75	—	—	—
$VF_5(g)$	320.9 ± 0.8	1433.9 ± 12.6	gas	298	130.46	0.63	−28.74	—	—
V_3Ge	114.4	141.2	cubic	298	111.50	4.56	−16.78	—	—
V_5Ge_3	109.6	331.8	tetrag	298	226.35	7.28	−33.56	—	—
VN	37.3 ± 0.4	218.0 ± 5.0	cubic	298	45.77	8.79	−9.25	—	—
VO	33.1 ± 0.4	431.8 ± 2.1	cubic	298	50.21	11.84	−13.51	—	—
V_2O_3	92.9 ± 2.9	1218.8 ± 1.7	hex	298	112.97	19.29	−14.98	—	—
VO_2	47.1 ± 1.0	713.8 ± 1.0	monocl	298	73.01	2.43	−14.98	—	—
			tetrag	341	74.68	7.11	−16.53	—	4.3
			liq	1818	106.69	—	—	—	56.9
V_2O_5	130.5 ± 0.4	1550.2 ± 1.7	orth	298	141.00	42.68	−23.43	—	—
			liq	952	190.37	—	—	—	66.9
$VOCl_3$	241.8 ± 3.3	735.5 ± 5.9	liq	298	150.62	—	—	—	—
$VOCl_3(g)$	342.7 ± 0.8	696.2 ± 5.9	gas	298	108.99	—	−17.15	—	—
V_3Si	97.9 ± 1.7	172.4 ± 5.0	cubic	298	90.37	16.74	−7.15	—	—
V_5Si_3	178.2 ± 4.2	431.0 ± 16.7	tetrag	298	210.66	15.36	−33.56	—	—
VSi_2	59.0 ± 2.1	122.2 ± 33.5	hex	298	67.78	14.98	−6.61	—	—
			liq	1953	119.24	—	—	—	152.7
V_3Sn	124.7	66.9	cubic	298	104.60	9.08	−8.83	—	—
W	32.6	0.0	bcc	298	23.68	4.06	−0.47	−0.33	—
			bcc	1000	29.41	−2.95	−12.40	2.13	—
			bcc	2000	126.40	−58.68	−879.21	11.17	—
			liq	3693	54.02	—	—	—	50.0
W(g)	173.8	−851.0	gas	298	10.26	17.54	3.28	24.02	—
			gas	600	−46.25	157.86	29.82	−73.35	—
			gas	1000	116.14	−65.43	−227.29	13.25	—
			gas	2000	25.46	−3.52	370.70	1.24	—
W_2B	66.9	66.9 ± 9.2	tetrag	298	77.11	6.15	−13.05	—	—
WB	33.1	66.1	tetrag	298	50.42	3.10	−15.69	—	—
W_2C	81.6 ± 4.2	26.4 ± 2.5	hex	298	89.75	10.88	−14.56	—	—
WC	34.7 ± 2.1	40.6 ± 1.7	hex	298	43.39	8.62	−9.33	−1.03	—
WCl_4	198.3	443.5	rhomb	298	106.48	77.86	1.38	−18.62	—
$WCl_4(g)$	379.1	336.0	gas	298	107.40	0.46	−7.78	—	—
WCl_5	217.6	514.2 ± 37.7	monocl	298	124.43	109.91	−1.38	—	—

TABLE I—*continued*

Substance	$S_{298} \pm \delta S$ (J/deg mol)	$-\Delta H_{298} \pm \delta H$ (kJ/mol)	Phase	T K	$C_p = A + BT + C/T^2 + DT^2$				H_t (kJ/mol)
					A	$B \times 10^3$ (J/deg mol)	$C \times 10^{-5}$	$D \times 10^6$	
$WCl_5(g)$	405.4	412.5	gas	298	131.38	1.42	−10.29	—	—
$W_2Cl_{10}(g)$	711.3	868.6	gas	298	281.71	0.52	−16.53	—	—
WCl_6	238.5	594.1	rhomb	298	125.52	167.36	—	—	—
			β	450	209.20	—	—	—	4.2
			gamma	503	188.28	—	—	—	15.5
			liq	555	200.83	—	—	—	6.7
$WCl_6(g)$	419.2	493.7	gas	298	157.53	0.21	−12.26	—	—
$WF_6(g)$	341.0 ± 0.4	1721.7 ± 2.5	gas	298	154.39	2.76	−31.38	—	—
WO_3	75.9 ± 1.3	842.7 ± 2.9	monocl	298	91.29	10.46	−19.00	—	—
			orth	603	77.40	25.10	—	—	1.4
			tetrag	1013	99.79	—	—	—	1.9
			tet2	1173	105.86	—	—	—	1.2
			tet3	1490	112.97	—	—	—	0.5
			liq	1745	131.80	—	—	—	73.4
$WO_3(g)$	286.2 ± 12.6	292.9 ± 25.1	gas	298	70.92	13.39	−12.30	−3.89	—
WO_2	50.5 ± 1.7	589.5 ± 6.3	monocl	298	77.40	−7.03	−18.49	8.87	—
$WO_2(g)$	285.3	−76.6	gas	298	49.08	10.00	−7.32	−2.89	—
$W(CO)_6$	331.8	946.8 ± 8.4	rhomb	298	164.43	261.92	—	—	—
$WOCl_4$	172.8	671.1	tetrag	298	115.06	104.60	—	—	—
			liq	483	182.00	—	—	—	33.5
$WOCl_4(g)$	377.0	573.2	gas	298	127.90	2.62	−20.71	—	—
WOF_4	175.7 ± 4.2	1394.5 ± 62.8	monocl	298	125.52	167.36	—	—	—
			liq	379	182.00	—	—	—	5.0
$WOF_4(g)$	334.7 ± 4.2	1336.8 ± 62.8	gas	298	125.69	4.18	−27.70	—	—
$WO2I_2(g)$	377.0 ± 8.4	430.1 ± 10.5	gas	298	102.55	4.60	−10.59	—	—
WS_2	64.9 ± 6.3	259.4 ± 16.7	hex	298	68.62	15.61	−8.66	—	—
W_5Si_3	229.7 ± 13.8	135.1 ± 20.9	tetrag	298	179.66	39.16	−8.91	—	—
WSi_2	64.0 ± 5.0	92.9 ± 9.2	tetrag	298	67.82	11.05	−6.11	—	—
Y	44.4	0.0	hcp	298	23.39	7.95	1.21	—	—
			bcc	1751	35.02	—	—	—	5.0
			liq	1795	39.79	—	—	—	11.4
Y(g)	179.4	−423.0	gas	298	26.15	−6.74	2.34	2.30	—
YCl_3	140.2	1000.0 ± 3.8	monocl	298	104.73	3.22	−12.13	—	—
			liq	994	177.57	—	—	—	31.5

YCl_3(g)	351.5± 6.7	702.9± 8.8	gas	298	83.68	—	−5.23	—	—
YF_3	109.6± 6.3	1718.4± 3.3	orth	298	99.41	7.45	−5.69	—	—
			hex	1350	122.38	—	—	—	32.4
			liq	1428	133.68	—	—	—	27.9
YF_3(g)	316.7± 2.9	1263.1±13.0	gas	298	85.52	—	−13.39	—	—
YH_2	38.4± 0.4	221.8± 4.2	cubic	298	32.80	21.25	−4.18	—	—
YH_3	41.9± 0.4	265.7	hex	298	38.74	15.48	—	—	—
YI_3	207.1	616.7±31.4	hex	298	100.92	11.51	−7.41	—	—
YN	37.7± 5.0	299.2±20.9	cubic	298	45.61	6.49	−7.32	—	—
Y_2O_3	99.2± 0.4	1905.0± 5.0	cubic	298	109.62	20.08	−11.30	—	—
Yb	59.8	0.0	β	298	22.84	14.52	—	−5.44	—
			gamma	1068	36.11	—	—	—	1.8
			liq	1092	36.82	—	—	—	7.7
Yb(g)	172.8	−152.0	gas	298	20.79	—	—	—	—
$YbCl_2$	122.6± 2.1	799.1± 8.4	ortho	298	67.99	20.92	—	—	—
$YbCl_3$	135.1±12.6	961.1± 3.3	monocl	298	94.68	9.33	−1.88	—	—
			liq	1148	121.34	—	—	—	—
YbN	62.8± 0.8	359.8±20.9	cubic	298	46.44	8.37	—	—	—
Yb_2O_3	133.1± 0.4	1814.6± 3.3	cubic	298	128.66	19.46	−17.15	—	—
Zn	41.6	0.0	hcp	298	22.38	10.04	—	—	—
			liq	693	31.38	—	—	—	7.3
Zn(g)	160.9	−130.4	gas	298	20.79	—	—	—	—
Zn_3As_2	165.3±11.7	134.7±10.5	tetrag	298	112.76	41.84	—	—	—
$ZnBr_2$	136.0± 4.2	329.7± 2.5	tetrag	298	52.72	43.51	—	—	—
			liq	675	113.80	—	—	—	15.6
$ZnCl_2$	111.5± 0.4	415.1± 0.8	tetrag	298	59.83	37.66	—	—	—
			liq	591	100.83	—	—	—	16.1
$ZnCl_2$(g)	276.6± 2.1	265.7± 2.5	gas	298	61.71	—	−4.31	—	—
ZnF_2	73.7± 0.4	764.4± 1.7	tetrag	298	62.30	11.36	—	—	—
			liq	1148	94.14	—	—	—	41.8
ZnI_2	161.5± 4.2	208.2± 0.8	tetrag	298	85.14	11.46	−12.55	—	—
Zn_3N_2	140.2±11.7	22.6± 8.4	cubic	298	79.50	94.14	—	—	—
ZnO	43.6± 0.4	350.5± 0.6	hex	298	48.99	5.10	−9.12	—	—
$ZnAl_2O_4$	87.0± 2.1	2071.1± 2.5	cubic	298	166.52	15.48	−46.02	—	—
$ZnCO_3$	82.4± 1.3	818.0± 1.3	hex	298	38.91	138.07	—	—	—
$ZnCr_2O_4$	116.3± 1.3	1548.1± 4.6		298	167.36	14.23	−25.10	—	—
$ZnFe_2O_4$	153.3± 0.8	1179.1± 5.9	cubic	298	22.38	7.32	−48.53	—	—
$Zn(OH)_2$	77.0± 0.4	645.4	rhomb	298	74.27	—	—	—	—
Zn_3P_2	150.6±10.5	159.0±14.6	tetrag	298	126.23	26.07	−15.23	—	—
			liq	1513	155.64	—	—	—	58.6

TABLE I—*continued*

Substance	$S_{298} \pm \delta S$ (J/deg mol)	$-\Delta H_{298} \pm \delta H$ (kJ/mol)	Phase	T K	$C_p = A + BT + C/T^2 + DT^2$				H_t (kJ/mol)
					A	$B \times 10^3$ (J/deg mol)	$C \times 10^{-5}$ (J/deg mol)	$D \times 10^6$ (J/deg mol)	
ZnP_2	60.2± 8.4	101.7±12.6	tetrag	298	71.25	16.74	−2.72	—	—
			liq	1255	91.21	—	—	—	37.2
ZnS	57.7± 0.4	205.2± 2.5	cubic	298	49.25	5.27	−4.85	—	—
			hex	1293	49.45	4.44	−4.35	—	13.4
ZnS(g)	238.1± 2.1	−202.1±16.7	gas	298	37.45	0.08	−1.67	—	—
$ZnSO_4$	110.5± 0.4	981.4± 1.7	rhomb	298	76.36	76.15	—	—	—
$ZnSO_4.H_2O$	145.5	1301.5± 2.5	monocl	298	127.61	87.03	—	—	—
$ZnSO_4.2H_2O$	192.5± 6.3	1596.0	cryst	298	168.11	102.72	—	—	—
$ZnSO_4.6H_2O$	363.6± 2.5	2779.0± 2.5	monocl	298	316.10	140.42	—	—	—
$ZnSO_4.7H_2O$	388.7± 2.1	3078.6± 2.5	rhomb	298	334.09	151.13	—	—	—
$ZnO.2ZnSO_4$	264.4	2320.4± 5.0	cryst	298	201.71	157.40	−9.12	—	—
ZnSb	82.6± 1.7	19.0± 1.3	rhomb	298	44.69	17.32	—	—	—
			liq	820	62.76	—	—	—	30.8
ZnSe	71.1± 6.3	163.2±10.5	cubic	298	50.17	5.77	—	—	—
$ZnSeO_3$	98.3± 8.4	652.3± 3.8	cryst	298	77.19	55.23	—	—	—
			liq	894	140.16	—	—	—	46.4
Zn_2SiO_4	131.4± 1.3	1643.1± 3.3	hex	298	144.89	36.94	−30.29	—	—
ZnTe	77.8± 3.3	119.2± 1.7	cubic	298	44.10	18.74	—	—	—
Zn_2TiO_4	144.8± 2.9	1649.8± 2.9	tetrag	298	166.61	23.18	−32.17	—	—
$ZnWO_4$	129.7± 8.4	1230.9± 7.9	monocl	298	121.71	33.51	−9.12	—	—
Zr	39.0	0.0	hcp	298	22.84	8.95	−0.67	—	—
			bcc	1136	21.51	6.57	36.69	—	3.9
			liq	2128	33.47	—	—	—	18.8
Zr(g)	181.3	−601.2	gas	298	23.00	3.05	3.64	—	—
ZrB_2	35.9± 0.4	323.8± 6.3	hex	298	64.22	9.41	−16.57	—	—
$ZrBr_4$	224.7	759.8± 2.5	cubic	298	133.01	4.74	−8.58	—	—
$ZrBr_4(g)$	414.6	643.5± 7.1	gas	298	107.91	0.08	−4.81	—	—
ZrC	33.3± 1.7	207.1± 3.8	cubic	298	51.13	3.39	−12.97	—	—
$ZrCl_4$	181.4± 2.5	980.3± 1.7	cubic	298	124.98	14.14	−8.37	—	—
$ZrCl_4(g)$	367.7± 0.4	868.6± 2.1	gas	298	107.45	0.29	−8.26	—	—
ZrF_4	104.6± 0.4	1911.3± 3.3	monocl	298	117.49	16.74	−17.24	—	—
$ZrF_4(g)$	318.4	1674.0	gas	298	105.60	1.19	−16.15	—	—
ZrI_4	260.2± 4.2	488.7± 6.3	cubic	298	130.79	9.12	−5.10	—	—
ZrN	38.9± 1.3	368.2± 2.5	cubic	298	46.44	7.03	−7.20	—	—

ZrO(g)	227.3	−58.6	gas	298	26.28	14.90	—	—	—
ZrO_2	50.4± 0.4	1100.8± 2.1	monocl	298	69.62	7.53	−14.06	—	—
			tetrag	1450	74.48	—	—	—	5.9
			liq	2950	87.86	—	—	—	87.0
ZrS_2	78.2±12.6	577.4±20.9	hex	298	64.27	15.06	—	—	—
$ZrSiO_4$	84.5± 1.7	2034.7± 1.7	tetrag	298	131.71	16.40	−33.81	—	—

Table II. *Thermochemical data of binary metallic systems*
(N_2 is the atomic fraction of the second element named in the first column)
Ag. Silver alloys: partial and integral excess Gibbs energies of solution in J/g–atom

System	Components	Thermo-Chemical Function	Temp. (K)	$N_2 =$ 0.0	0.1	0.3	0.5	0.7	0.9
⟨Ag–Al⟩	⟨Ag⟩ ⟨Al⟩	$\Delta\bar{G}^{EAl}$	722	−23,430.4	−23,514.1	−13,095.9	—	—	—
{Ag–Al}	{Ag} {Al}	ΔH	1273	0	−3138.0	−6401.5	−3941.3	−1129.7	280.3
	{Al}	ΔH_{Al}	1273	−35,564.0	−27,417.8	−8978.9	5522.9	2259.4	405.8
⟨Ag–Au⟩	⟨Ag⟩ ⟨Au⟩	ΔH	800	0	−1799.1	−4045.9	−4648.4	−3765.6	−1548.1
	⟨Au⟩	$\Delta\bar{H}_{Au}$	800	−20,292.4	−15,882.5	−8941.2	−4221.7	−1397.5	−142.3
{Ag–Au}	{Ag} {Au}	ΔH	1350	0	−1853.5	−4322.1	−5146.3	−4322.1	−1853.5
	{Au}	$\Delta\bar{H}_{Au}$	1350	−20,585.3	−16,673.2	−10,083.4	−5146.3	−1853.5	−205.0
{Ag–Bi}	{Ag} {Bi}	$\Delta\bar{H}$	1000	0	—	698.7	1221.7	1711.3	1046.0
	{Bi}	$\Delta\bar{H}_{Bi}$	1000	—	—	2334.7	2820.0	1832.6	272.0
⟨Ag–Cd⟩	⟨Ag⟩ ⟨Cd⟩	ΔH	673	0	−2523.0	−6100.3	—	−6443.4	—
	⟨Cd⟩	$\Delta\bar{H}_{Cd}$	673	−26,777.6	−23,417.8	−15,413.9	—	—	—
{Ag–Cd}	{Ag} {Cd}	ΔG^E	1223	0	−2179.9	−4568.9	−4744.7	−3389.0	−1196.6
	{Cd}	ΔG^E_{Cd}	1223	—	−18,978.6	−8660.9	−2970.6	−552.3	0
{Ag–Cu}	{Ag} {Cu}	ΔH	1423	0	1903.7	3853.5	4242.6	3468.5	1472.8
	{Cu}	$\Delta\bar{H}_{Cu}$	1423	23,012.0	15,690.0	7481.0	3765.6	1435.1	159.0
{Ag–Ga}	{Ag} {Ga}	ΔH	1000	0	—	−3631.7	−2669.4	−853.5	230.1
	{Ga}	$\Delta\bar{H}_{Ga}$	1000	—	—	−3610.8	1464.4	1719.6	322.2
{Ag–Ge}	{Ag} {Ge}	ΔH	1250	0	−682.0	393.3	2234.3	2686.1	1376.5
	{Ge}	$\Delta\bar{H}_{Ge}$	1250	−12,552.0	−2133.8	7322.0	5481.0	2058.5	255.2

⟨Ag–Hg⟩	⟨Hg⟩	ΔG^E_{Hg}	500	−12,259.1	−9706.9	−1230.1	—	—	—
{Ag–In}	{Ag} {In}	ΔH	1100	0	—	−5648.4	−4133.8	−1974.8	−510.4
	{In}	$\Delta \bar{H}_{In}$	—	−18,828.0	—	−8255.0	1782.4	656.9	92.05
⟨Ag–Mg⟩	⟨Ag⟩ ⟨Mg⟩	ΔH	773	0	−4644.2	—	−18,409.6	—	—
	⟨Mg⟩	$\Delta \bar{H}_{Mg}$	773	−46,860.8	−38,430.0	—	—	—	—
⟨Ag–Mn⟩	⟨Mn⟩β	$\Delta \bar{G}^E_{Mn}$	1150	836.8	3422.5	7154.6	—	—	—
{Ag–Pb}	{Ag} {Pb}	ΔH	1273	0	1054.4	2912.1	3702.8	2974.8	1146.4
	{Pb}	$\Delta \bar{H}_{Pb}$	1273	10,460.0	10,460.0	8004.0	3681.9	920.5	46.02
⟨Ag–Pd⟩	⟨Ag⟩ ⟨Pd⟩	ΔH	1200	0	−2778.2	−5510.3	−5020.8	−3263.5	−1046.0
	⟨Pd⟩	$\Delta \bar{G}^E_{Pd}$	1200	−24,518.2	−17,070.7	−4769.8	962.3	878.6	87.86
{Ag–S}	$\frac{1}{2}(S_2)$	ΔH_S	1400	−72,676.1	−85,897.5	−123,218.8	—	—	—
⟨Ag–Sb⟩	⟨Sb⟩	$\Delta \bar{G}^E_{Sb}$	600	−3405.8	−5589.8	—	—	—	—
{Ag–Sb}	{Ag} {Sb}	ΔH	1250	0	−2108.7	−2635.9	−62.76	1004.2	656.9
	{Sb}	$\Delta \bar{H}_{Sb}$	1250	−25,104.0	−16,828.0	6405.7	4435.0	1472.8	167.4
{Ag–Si}	{Ag} {Si}	ΔH	1473	0	−259.4	782.4	2627.6	3581.5	2129.7
	{Si}	$\Delta \bar{H}_{Si}$	1473	−4991.5	100.42	6995.6	6548.0	3577.3	698.7
{Ag–Sn}	{Ag} {Sn}	ΔH	1250	0	−2242.6	−2677.8	−949.8	246.9	347.3
	{Sn}	$\Delta \bar{H}_{Sn}$	900	—	—	—	2510.4	795.0	175.7
	{Sn}	$\Delta \bar{G}^E_{Sn}$	1250	4142.2	−1397.5	−5158.9	−4288.6	−2309.6	−322.2
{Ag–Tl}	{Ag} {Tl}	ΔH	—	—	723.8	1882.8	2485.3	2288.6	1171.5
	{Tl}	$\Delta \bar{H}_{Tl}$	975	—	—	5104.5	3075.2	1372.4	267.8
⟨Ag–Zn⟩	⟨Ag⟩ ⟨Zn⟩	ΔH	873	0	−1673.6	−8472.6	−3983.2	−3891.1ε	—
	⟨Zn⟩	$\Delta \bar{H}_{Zn}$	873	−11,824.0	−14,213.0	−9405.6	−7886.8	−209.2ε	—
{Ag–Zn}	{Ag} {Zn}	ΔG^E	1023	—	—	−4267.7	−4619.1	−3598.2	−1338.9
	{Zn}	$\Delta \bar{G}^E_{Zn}$	1023	—	—	−10,878.4	−4204.9	−949.8	−33.47

Ag. Silver alloys: partial and integral excess entropies of solution in J/deg g-atom

System	Components	Thermo-Chemical Function	Temp. (K)	$N_2 =$ 0.0	0.1	0.3	0.5	0.7	0.9
{Ag–Al}	{Ag} {Al}	ΔS^E	1273	0	−0.05	0.08	1.56	2.00	1.15
	{Al}	$\Delta \bar{S}^E_{Al}$	1273	−1.31	0	1.31	5.43	1.74	0.29
⟨Ag–Au⟩	⟨Ag⟩ ⟨Au⟩	ΔS^E	800	0	−0.51	−1.20	−1.44	−1.21	−0.52
	⟨Au⟩	$\Delta \bar{S}^E_{Au}$	800	−5.67	−4.61	−2.81	−1.44	−0.52	−0.06
{Ag–Au}	{Ag} {Au}	ΔS^E	1350	0	−0.62	−1.54	−1.96	−1.75	−0.79
	{Au}	$\Delta \bar{S}^E_{Au}$	1350	−6.63	−5.76	−3.96	−2.26	−0.90	−0.11
{Ag–Bi}	{Ag} {Bi}	ΔS^E	1000	0	—	0.72	0.41	0.55	0.30
	{Bi}	$\Delta \bar{S}^E_{Bi}$	1000	—	—	−0.45	0.28	0.70	0.00
⟨Ag–Cd⟩	⟨Ag⟩ ⟨Cd⟩	ΔS^E	673	0	−0.36	−0.84	—	−1.46ε	—
	⟨Cd⟩	$\Delta \bar{S}^E_{Cd}$	673	−6.22	−2.15	−4.67	—	—	—
{Ag–Cu}	{Au} {Cu}	ΔS^E	1423	0	0.44	0.64	0.51	0.34	0.13
	{Cu}	$\Delta \bar{S}^E_{Cu}$	1423	5.98	3.08	0.46	0.10	0.08	0.00
{Ag–Ga}	{Ag} {Ga}	ΔS^E	1000	0	—	1.51	2.01	2.60	1.69
	{Ga}	$\Delta \bar{S}^E_{Ga}$	1000	—	—	1.97	3.85	2.87	0.50
{Ag–Ge}	{Ag} {Ge}	ΔS^E	1250	0	−0.03	0.95	1.95	1.95	0.87
	{Ge}	$\Delta \bar{S}^E_{Ge}$	1250	−2.68	1.77	5.29	3.36	1.15	0.07
{Ag–In}	{Ag} {In}	ΔS^E	1100	0	—	−3.64	−2.54	−1.26	−0.44
	{In}	$\Delta \bar{S}^E_{In}$	1100	—	—	−5.63	1.41	0.09	−0.00
⟨Ag–Mg⟩	⟨Ag⟩ ⟨Mg⟩	ΔS^E	773	0	0.56	—	−0.38	—	—
	⟨Mg⟩	$\Delta \bar{S}^E_{Mg}$	773	7.04	13.33	—	—	—	—
{Ag–Pb}	{Ag} {Pb}	ΔS^E	1273	0	0.67	1.57	1.83	1.28	0.39
	{Pb}	$\Delta \bar{S}^E_{Pb}$	1273	8.87	5.58	3.74	1.44	0.03	−0.04
⟨Ag–Pd⟩	⟨Ag⟩ ⟨Pd⟩	ΔS^E	1200	0	−0.85	−1.59	−1.83	−1.69	−0.70
{Ag–S}	$\frac{1}{2}(S_2)$	ΔS^E_S	1400	−46.86	−51.59	−72.30	—	—	—
{Ag–Sb}	{Ag} {Sb}	ΔS^E	1250	0	0.28	1.30	2.54	2.28	0.96
	{Sb}	$\Delta \bar{S}^E_{Sb}$	1250	4.23	2.24	8.38	3.43	0.97	0.11
{Ag–Si}	Si	$\Delta \bar{S}^E_{Si}$	1250	−5.40	−2.99	−0.10	1.00	0.90	0.29
{Ag–Sn}	{Ag} {Sn}	ΔS^E	1250	0	−0.67	−0.18	0.79	0.86	0.19
	{Sn}	$\Delta \bar{S}^E_{Sn}$	900	—	—	—	1.40	0.14	0.09
{Ag–Tl}	{Ag} {Tl}	ΔS^E	975	0	—	0.59	0.56	0.37	0.22
	{Tl}	$\Delta \bar{S}^E_{Tl}$	975	—	—	0.88	0.25	0.12	0.10
⟨Ag–Zn⟩	⟨Ag⟩ ⟨Zn⟩	ΔS^E	873	0	−0.40	0.46	1.57	1.07ε	—
	⟨Zn⟩	$\Delta \bar{S}^{E_{Zn}}$	873	−0.13	0.03	1.75	−1.55	2.98ε	—

Al. Aluminium alloys: partial and integral heats or excess Gibbs energies of solution in J/g–atom

System	Components	Thermo-Chemical Function	Temp. (K)	$N_2 =$ 0.0	0.1	0.3	0.5	0.7	0.9
⟨Al–Ag⟩	⟨Ag⟩	ΔG^E_{Ag}	722	2953.9	—	—	—	−2205.0	−58.58
{Al–Ag}	{Al} {Ag}	ΔH	1273	0	280.3	−1129.7	−3941.3	−6405.7	−3133.8
	{Ag}	$\Delta \bar{H}_{Ag}$	1273	7322.0	−849.4	−9029.1	−13,409.7	−5301.1	−435.1
{Al–Au}	{Al} {Au}	ΔH	1338	0	−7719.5	−24,246.3	−33,764.9	−29,903.0	−12,200.5
	{Au}	$\Delta \bar{H}_{Au}$	1338	−69,726.4	−82,106.8	−74,994.0	−42,224.9	−13,363.7	−857.7
{Al–Be}	{Be}	$\Delta \bar{H}$	1600	—	—	—	21,388.6	10,250.8	1589.9
{Al–Bi}	{Al} {Bi}	ΔH	—	0	2225.9	6326.2	7146.3	4882.7	1841.0
	{Bi}	$\delta \bar{H}_{Bi}$	1173	22,217.0	—	—	—	644.3	129.7
{Al–Cu}	{Al} {Cu}	ΔH	1373	0	−1920.5	−6045.9	−9050.0	−8284.3	−3347.2
	{Cu}	$\Delta \bar{H}_{Cu}$	1373	−17,677.4	−20,292.4	−19,560.2	−13,681.7	−2845.1	−272.0
{Al–Fe}	{Fe}	$\Delta \bar{H}_{Fe}$	971	−128,448.8	—	—	—	—	—
{Al–Ga}	{Al} {Ga}	ΔH	1023	0	297.1	619.2	656.9	502.1	205.0
	{Ga}	$\Delta \bar{H}_{Ga}$	1023	3481.1	2510.4	1213.4	472.8	167.4	12.55
{Al–Ge}	{Al} {Ge}	ΔH	1200	0	−1138.0	−3050.1	−3882.8	−3234.2	−1255.2
	{Ge}	$\Delta \bar{H}_{Ge}$	1200	−11,547.8	−11,121.1	−8200.6	−4171.4	−1146.4	−37.66
{Al–In}	{Al} {In}	ΔH	1173	0	2443.5	5192.3	5711.2	4548.0	1903.7
	{In}	$\Delta \bar{H}_{In}$	1173	28,451.2	20,945.1	10,485.1	4757.2	1677.8	200.8
{Al–Mg}	{Al} {Mg}	ΔH	1073	0	−1305.4	−3008.3	−3372.3	−2569.0	−962.3
	{Mg}	$\Delta \bar{H}_{Mg}$	1073	−14,560.3	−11,853.3	−6610.7	−2681.9	−656.9	−33.47
{Al–Pb}	{Al} {Pb}	ΔH	>1650	0	3866.0	8911.9	9355.4	6443.4	2443.5
	{Pb}	$\Delta \bar{H}_{Pb}$	1200	41,714.5	—	—	—	—	—
{Al–Si}	{Al} {Si}	ΔH	—	0	−1020.9	−2447.6	−3104.5	−2769.8	−1255.2
	{Si}	$\Delta \bar{H}_{Si}$	—	−10,460.0	−9100.2	−6276.0	−3598.2	−1405.8	−175.7
{Al–Sn}	{Al} {Sn}	ΔH	973	0	1941.4	3765.6	4041.7	3188.2	1322.1
	{Sn}	$\Delta \bar{H}_{Sn}$	973	24,455.5	15,397.1	7071.0	3204.9	1142.2	138.1
⟨Al–Zn⟩	⟨Al⟩ ⟨Zn⟩	ΔH	653	0	1364.0	2991.6	3451.8	—	—
	⟨Zn⟩	$\Delta \bar{H}_{Zn}$	653	15,656.5	11,924.4	6292.7	3786.5	—	—
{Al–Zn}	{Al} {Zn}	ΔH	1000	0	941.4	2158.9	2569.0	2200.8	979.1
	{Zn}	$\Delta \bar{H}_{Zn}$	1000	10,619.0	8347.1	4928.8	2640.1	606.7	150.6

Al. Aluminium alloys: partial and integral excess entropies of solution in J/deg g–atom

System	Components	Thermo-Chemical Function	Temp. (K)	$N_2 =$ 0.0	0.1	0.3	0.5	0.7	0.9
{Al–Ag}	{Al} {Ag}	ΔS^E	1273	0	1.15	2.01	1.56	0.08	−0.05
	{Ag}	$\Delta \bar{S}^E_{Ag}$	1273	14.71	8.88	2.62	−2.31	−0.46	−0.06
{Al–Au}	{Al} {Au}	ΔS^E	1338	0	1.36	0.52	−0.12	0.18	0.53
	{Au}	$\Delta \bar{S}^E_{Au}$	1338	23.58	5.97	−4.15	−0.24	0.96	0.23
{Al–Be}	{Be}	$\Delta \bar{S}^E_{Be}$	1600	—	—	—	10.47	4.82	0.74
{Al–Bi}	{Bi}	$\Delta \bar{S}^E_{Bi}$	1173	−6.38	—	—	—	−0.31	0.08
{Al–Cu}	{Al} {Cu}	ΔS^E		0	1.15	2.57	3.40	3.84	2.05
	{Cu}	$\Delta \bar{S}^E_{Cu}$	1373	13.55	9.81	6.30	4.77	3.64	0.38
{Al–Ga}	{Al} {Ga}	ΔS^E	1023	0	0.18	0.35	0.33	0.23	0.09
	{Ga}	$\Delta \bar{S}^E_{Ga}$	1023	2.18	1.46	0.59	0.15	0.05	0.00
{Al–Ge}	{Al} {Ge}	ΔS^E	1200	0	0.36	0.55	0.44	0.29	0.11
	{Ge}	$\Delta \bar{S}^E_{Ge}$	1200	4.92	2.60	0.41	0.10	0.05	0.00
{Al–In}	{Al} {In}	ΔS^E	1173	0	0.40	0.69	0.59	0.37	0.13
	{In}	$\Delta \bar{S}^E_{In}$	1173	5.02	3.10	0.83	0.13	0	0.03
{Al–Mg}	{Al} {Mg}	ΔS^E	1073	0	0.00	−0.44	−0.83	−0.82	−0.36
	{Mg}	$\Delta \bar{S}^E_{Mg}$	1073	1.26	−1.07	−2.23	−1.35	−0.46	−0.03
{Al–Si}	{Al} {Si}	ΔS^E	—	0	0.23	0.47	0.25	−0.05	−0.22
	{Si}	$\Delta \bar{S}^E_{Si}$	—	2.55	1.90	0.42	−0.54	−0.59	−0.13
{Al–Sn}	{Al} {Sn}	ΔS^E	973	0	0.67	1.13	1.21	1.05	0.50
	{Sn}	$\Delta \bar{S}^E_{Sn}$	973	9.39	4.63	1.96	1.11	0.54	0.13
⟨Al–Zn⟩	⟨Al⟩ ⟨Zn⟩	ΔS^E	653	0	0.48	1.06	1.31	—	—
	⟨Zn⟩	$\Delta \bar{S}^E_{Sn}$	653	5.97	4.22	2.13	2.19	—	—
{Al–Zn}	{Al} {Zn}	ΔS^E	1000	0	0.34	0.72	0.95	0.89	0.33
	{Zn}	$\Delta \bar{S}^E_{Zn}$	1000	4.21	2.72	1.69	1.30	0.44	−0.02

Au. Gold alloys: partial and integral heats or excess Gibbs energies of solution in J/g–atom

System	Components	Thermo-Chemical Function	Temp. (K)	$N_2 =$ 0.0	0.1	0.3	0.5	0.7	0.9
⟨Au–Ag⟩	⟨Ag⟩ ⟨Au⟩	ΔH	800	0	−1552.3	−3761.4	−4648.4	−4045.9	−1794.9
	⟨Ag⟩	$\Delta \bar{H}_{Ag}$	800	−16,903.4	−14,242.3	−9288.5	−5079.4	−1949.7	−230.1
{Au–Ag}	{Au} {Ag}	ΔH	1350	0	−1853.5	−4322.1	−5146.3	−4322.1	−1853.5
	{Ag}	$\Delta \bar{H}_{Ag}$	1350	−20,585.3	−16,673.2	−10,087.6	−5146.3	−1853.5	−205.0
{Au–Al}	{Au} {Al}	ΔH	1338	0	−12,200.5	−29,903.0	−33,764.9	−24,246.3	−7719.5
	{Al}	$\Delta \bar{H}_{Al}$	1338	−128,549.2	−114,239.9	−68,492.1	−25,300.6	−2497.8	543.9
{Au–Bi}	{Au} {Bi}	ΔH	973	0	—	418.4	627.6	502.1	188.3
	{Bi}	$\Delta \bar{H}_{Bi}$	973	—	—	1769.8	698.7	121.34	8.37
⟨Au–Cd⟩	⟨Au⟩ ⟨Cd⟩	ΔH	700	0	−5987.3	$-14{,}196.3\alpha_2$	−18,577.0	$-15{,}313.4\varepsilon$	—
	⟨Cd⟩	$\Delta \bar{H}_{Cd}$	700	−65,270.4	−55,241.4	$-39{,}287.8\alpha_2$	−20,313.3	$-17{,}572.8\varepsilon$	—
{Au–Cd}	{Au} {Cd}	ΔH	1000	0	—	—	−13,192.2	−10,769.6	−4334.6
	{Cd}	$\Delta \bar{H}_{Cd}$	1000	—	—	—	−13,275.8	−3916.2	−322.2
⟨Au–Co⟩	⟨Co⟩β	$\Delta \bar{H}_{Co}$	1150	40,124.6	37,141.4	—	—	—	—
⟨Au–Cu⟩	⟨Au⟩ ⟨Cu⟩	ΔH	800	0	−1213.4	−3573.1	−5108.7	−4974.8	−1841.0
	⟨Cu⟩	$\Delta \bar{H}_{Cu}$	800	−11,631.5	−12,367.9	−10,920.2	−7384.8	−2644.3	121.34
{Au–Cu}	{Au} {Cu}	ΔH	1550	0	−1435.1	−3510.4	−4368.1	−3828.4	−1707.1
	{Cu}	$\Delta \bar{H}_{Cu}$	1550	−15,585.4	−13,234.0	−8744.6	−4836.7	−1878.6	−221.8
⟨Au–Fe⟩	⟨Au⟩ ⟨Fe⟩α	ΔH	1123	0	2209.2	4882.7	6552.1	—	—
	⟨Fe⟩α	$\Delta \bar{H}_{Fe}$	1123	25,480.6	18,472.4	12,008.1	9665.0	—	—

System	Components	Thermo-Chemical Function	Temp. (K)	$N_2 =$ 0.0	0.1	0.3	0.5	0.7	0.9
{Au–Fe}	{Au} {Fe}	ΔH		0	5857.6	14,058.2	17,154.4	—	—
	{Fe}	$\Delta \bar{H}_{Fe}$	1473	64,852.0	53,534.3	34,112.2	18,325.9	—	—
{Au–Ga}	{Au} {Ga}	ΔH	1030	0	−7886.8* ÷	−15,690.0	−15,982.9	−11,380.5	−4050.1
	{Ga}	$\Delta \bar{H}_{Ga}$	1030	−93,721.6*	−65,270.4*	−28,158.3	−9581.4	−2071.1	−121.34
{Au–Ge}	{Au} {Ge}	ΔH	1423	0	−2133.8	−4518.7	−4686.1	−3472.7	−1255.2
⟨Au–Hg⟩	⟨Hg⟩	$\Delta \bar{H}_{Hg}$	500	−5313.7	−2217.5	—	—	—	—
{Au–Mn}	{Au} {Mn}	ΔG	1535	0	−3502.0	−11,321.9	−17,593.7	−14,254.9	−4686.1
	{Mn}	ΔG^{E}_{Mn}	1535	−35,564.0	−36,262.7	−40,283.6	−23,723.3	−1828.4	217.6
⟨Au–Ni⟩	⟨Au⟩ ⟨Ni⟩	ΔH	1150	0	2092.0	5635.8	7560.5	6727.9	2690.3
	⟨Ni⟩	$\Delta \bar{H}_{Ni}$	1150	21,505.8	20,267.3	15,765.3	9351.2	2991.6	117.15
{Au–Pb}	{Au} {Pb}	ΔH	1200	0	−435.1	−790.8	−698.7	−305.4	259.4
	{Pb}	$\Delta \bar{H}_{Pb}$	1200	—	−3046.0	−1138.0	−92.05	548.1	343.1
⟨Au–Pd⟩	⟨Au⟩ ⟨Pd⟩	ΔH	—	0	−4079.4	−7656.7	−7447.5	−4736.3	−1439.3
	⟨Pd⟩	$\Delta \bar{H}_{Pd}$	—	−46,609.8	−32,258.6	−12,907.6	−3200.8	58.58	142.3
⟨Au–Pt⟩	⟨Au⟩ ⟨Pt⟩	ΔH	—	0	0	1108.8	2656.8	3326.3	1903.7
	⟨Pt⟩	$\Delta \bar{H}_{Pt}$	—	−2656.8	2133.8	6485.2	6276.0	3096.2	447.7
{Au–Sn}	{Au} {Sn}	ΔH	823	0	—	−10,321.9	−11,572.9	−8744.6	−3179.8
	{Sn}	$\Delta \bar{H}_{Sn}$	823	—	—	−22,685.6	−9301.0	−1857.7	−92.05
{Au–Te}	⟨Au⟩ {Te}	ΔH	737	0	—	—	4225.8	2757.3	1058.6
{Au–Tl}	{Tl}	$\Delta \bar{H}_{Tl}$	973	—	—	—	205.0	−12.55	−8.37
{Au–Zn}	{Au} {Zn}	ΔH	1080	—	0	−17,698.3	−22,744.2	−18,773.6	−7309.4
	{Zn}	$\Delta \bar{H}_{Zn}$	1080	—	—	−50,208.0	−25,187.7	−6025.0	−393.3

Au. Gold alloys: partial and integral excess entropies of solution in J/degg-atom

System	Components	Thermo-Chemical Function	Temp. (K)	$N_2 =$ 0.0	0.1	0.3	0.5	0.7	0.9
⟨Au–Ag⟩	⟨Au⟩⟨Ag⟩	ΔS^E	800	0	−0.51	−1.20	−1.44	−1.21	−0.52
	⟨Ag⟩	$\Delta \bar{S}^E_{Ag}$	800	−5.81	−4.69	−2.81	−1.43	−0.51	−0.05
{Au–Ag}	{Au}{Ag}	ΔS^E	1350	0	−0.79	−1.75	−1.96	−1.54	−0.62
	{Ag}	$\Delta \bar{S}^E_{Ag}$	1350	−9.05	−6.94	−3.72	−1.66	−0.51	−0.05
{Au–Al}	{Au}{Al}	ΔS^E	1338	0	0.53	0.18	−0.12	0.52	1.36
	{Al}	$\Delta \bar{S}^E_{Al}$	1338	8.37	3.22	−1.64	0.01	2.52	0.85
{Au–Bi}	{Au}{Bi}	ΔS^E	973	0	—	1.03	1.25	1.02	0.44
	{Bi}	$\Delta \bar{S}^E_{Bi}$	973	—	—	2.55	1.23	0.38	0.06
⟨Au–Cd⟩	⟨Au⟩⟨Cd⟩	ΔS^E	700	0	-2.87α	$-6.64\alpha_2$	-6.59β	-6.32ε	—
		$\Delta \bar{S}^E_{Cd}$	700	−34.97	−23.92	$-15.94\alpha_2$	−7.87	-15.44ε	—
⟨Au–Co⟩	⟨Co⟩β	Δ	1150	8.37	14.74	—	—	—	—
⟨Au–Cu⟩	⟨Au⟩⟨Cu⟩	ΔS^E	800	0	0.20	0.34	0.29	0.13	0.25
	⟨Cu⟩	$\Delta \bar{S}^E_{Cu}$	800	2.56	1.51	0.39	−0.14	0.10	0.22
{Au–Cu}	{Au}{Cu}	ΔS^E	1550	0	0.47	1.00	1.06	0.79	0.30
	{Cu}	$\Delta \bar{S}_{ECu}$	1550	5.46	4.03	1.96	0.76	0.18	0.01
⟨Au–Fe⟩	⟨Au⟩⟨Fe⟩α	ΔS^E	1123	0	1.72	2.97	3.18	—	—
	⟨Fe⟩α	21.76	12.68	4.63	3.23	—	—		
{Au–Fe}	{Au}{Fe}	ΔS^E	1473	0	4.56	9.64	11.06	—	—
	{Fe}	$\Delta \bar{S}^E_{Fe}$	1473	53.40	39.12	19.05	7.36	—	—
{Au–Ga}	{Au}{Ga}	ΔS^E	1400	0	0	0.25	1.13	1.26	0.25
	{Ga}	$\Delta \bar{S}_{EGa}$	1400	−4.44	0	3.26	2.62	1.03	0.13
{Au–Ge}	{Au}{Ge}	ΔS^E	1423	0	−0.38	−0.54	0.13	0.54	0.67
⟨Au–Hg⟩	⟨Hg⟩	$\Delta \bar{S}^E_{Hg}$	500	−8.37	−4.77	—	—	—	—
⟨Au–Ni⟩	⟨Au⟩⟨Ni⟩	ΔS^E	1150	0	0.58	1.92	2.79	2.35	0.67
	⟨Ni⟩	$\Delta \bar{S}^E_{Ni}$	1150	5.08	6.34	6.33	3.57	0.53	−0.16
{Au–Pb}	{Au}{Pb}	ΔS^E	1200	0	0.64	1.49	1.78	1.66	1.09
	{Pb}	$\Delta \bar{S}^E_{Pb}$	1200	—	5.76	3.49	1.78	1.36	0.39
⟨Au–Pd⟩	⟨Au⟩⟨Pd⟩	ΔS^E	—	0	−1.13	−2.64	−3.14	−2.64	−1.13
	⟨Pd⟩	$\Delta \bar{S}^E_{Pd}$	—	−12.55	−10.17	−6.15	−3.14	−1.13	−0.13
⟨Au–Pt⟩	⟨Au⟩⟨Pt⟩	ΔS^E	—	0	−1.21	−2.43	−2.30	−1.46	−0.44
	⟨Pt⟩	$\Delta \bar{S}^E_{Pt}$	—	−14.64	−10.08	−3.97	−0.94	—	—
{Au–Sn}	{Au}{Sn}	ΔS^E	823	0	—	2.08	1.31	0.77	0.39
	{Sn}	$\Delta \bar{S}^E_{Sn}$	823	—	—	−0.11	−0.64	0.38	0.05
{Au–Tl}	{Au}{Tl}	$\Delta \bar{S}^E_{Tl}$	973	—	—	—	2.67	0.87	0.08
{Au–Zn}	{Au}{Zn}	ΔS^E	1080	0	—	−0.60	−2.06	−2.12	−0.74
	{Zn}	$\Delta \bar{S}^E_{Zn}$	1080	—	—	−6.57	−4.73	−0.71	0.04

Co. Cobalt alloys: partial and integral heats or excess Gibbs energies of solution in J/g–atom

System	Components	Thermo-Chemical Function	Temp. (K)	$N_2 =$ 0.0	0.1	0.3	0.5	0.7	0.9
{Co–Al}	{Co} {Al}	ΔG^E_{Al}	1873	−82,650.7	−68,596.7	−42,706.1	—	—	—
⟨Co–Cr⟩	⟨Co⟩fcc ⟨Cr⟩bcc	ΔH	1473	0	313.8	2133.8	—	7112.8	2991.6
	⟨Cr⟩	$\Delta \bar{H}_{Cr}$	1473	2803.3	4037.6	13,137.8	tab⊄—	—	502.1
⟨Co–Cu⟩	⟨Cu⟩	ΔG^E_{Cu}	1300	0	—	—	—	—	—
⟨Co–Fe⟩	⟨Co⟩γ⟨Fe⟩γ	ΔH	1473	0	−439.3	−1129.7	−1313.8	−974.9	−355.6
	⟨Fe⟩γ	$\Delta \bar{H}_{Fe}$	1473	−4539.6	−4167.3	−2832.6	−1087.8	−221.8	−16.74
{Co–Fe}	{Co} {Fe}	ΔH	1873	0	−916.3	−2125.5	−2426.7	−1907.9	−761.5
	{Fe}	$\Delta \bar{H}_{Fe}$	1873	—	−8313.6	−4769.8	−2092.0	−610.9	−58.58
{Co–Ge}	⟨Co⟩ {Ge}	ΔH	1287	0	—	—	−2493.7	−4435.0	−1652.7
⟨Co–Mn⟩	⟨Co⟩ ⟨Mn⟩β	ΔG^E	1023	0	−2138.0	−4715.4	−5606.6	−10,397.2	−4979.0
	⟨Mn⟩β	$\Delta \bar{G}^E_{Mn}$	1023	−24,581.0	−18,639.7	−10,384.7	−6234.2	−2899.5	−150.6
⟨Co–Mo⟩	⟨Mo⟩	$\Delta \bar{G}^E_{Mo}$	1350	16,736.0	14,309.3	—	—	—	—
Co–Ni							this system is nearly ideal in the solid and liquid states		
⟨Co–Pt⟩	⟨Co⟩ ⟨Pt⟩	ΔG^E	1273	0	−4464.3	−10,422.3	−12,405.6	−10,422.3	−4464.3
{Co–Si}	{Co} {Si}	ΔH	1873	0	−14,518.5	−38,953.0	−46,651.6	−34,183.3	−12,091.8
	{Si}	$\Delta \bar{H}_{Si}$	1873	−146,440.0	−142,674.4	−102,089.6	−36,819.2	−5857.6	−125.5
{Co–Sn}	{Co} {Sn}	ΔH	1773	0	−1589.9	−2301.2	−1046.0	543.9	836.8

Co. Cobalt alloys: partial and integral excess entropies of solution in J/deg g–atom

System	Components	Thermo-Chemical Function	Temp. (K)	$N_2 =$ 0.0	0.1	0.3	0.5	0.7	0.9
⟨Co–Cr⟩	⟨Co⟩ ⟨Cr⟩	ΔS^E	1473	0	0.27	1.78	—	6.19	3.79
	⟨Cr⟩	$\Delta \bar{S}_{Cr}$	1473	1.76	2.95	11.02	—	—	2.28
⟨Co–Fe⟩	—	—	—	—	—	—	—	—	—
{Co–Fe}	—	—	—	—	—	—	—	—	—
{Co–Si}	{Co} {Si}	ΔS^E	1873	0	−2.55	−7.24	−9.20	−7.20	−2.68
	{Si}	$\Delta \bar{S}_{Si}$	1873	−25.36	−26.32	−20.00	−9.00	−1.84	−0.08

Cr. Chromium alloys: partial and integral heats of excess Gibbs energies of solution in J/g atom

System	Components	Thermo-Chemical Function	Temp. (K)	$N_2 =$ 0.0	0.1	0.3	0.5	0.7	0.9
⟨Cr–Co⟩	⟨Cr⟩bcc	ΔS^E	1473	0	2991.6	7112.8	—	2133.8	313.8
	⟨Co⟩fcc								
	⟨Co⟩	$\Delta \bar{S}^E_{Co}$	1473	0	25,438.7	—	—	−2585.7	−100.42
⟨Cr–Fe⟩	⟨Cr⟩ ⟨Fe⟩	ΔS^E	1550	0	2259.4	5271.8	6276.0	5271.8	2259.4
	⟨Fe⟩	$\Delta \bar{S}^E_{Fe}$	1550	25,104.0	20,334.2	12,301.0	6276.0	2259.4	251.0
{Cr–Fe}	{Cr} {Fe}	ΔS^E	1750–2150	0	1903.7	4393.2	5209.1	4372.3	1924.6
	{Fe}	$\Delta \bar{S}^E_{Fe}$	1750–2150	20,995.3	17,154.4	10,167.1	5188.2	1924.6	251.0
⟨Cr–Mo⟩	⟨Cr⟩ ⟨Mo⟩	ΔH	1400	0	3117.1	6506.1	7217.4	5627.5	2071.1
⟨Cr–Ni⟩	⟨Cr⟩ ⟨Ni⟩	ΔH	—	0	4866.0	8987.2	6359.7	1405.8	−878.6
	⟨Ni⟩	$\Delta \bar{H}_{Ni}$	—	58,040.4	40,225.0	10,296.8	−8070.9	−4698.6	−878.6
{Cr–Ni}	{Cr} {Ni}	ΔG^E	—	0	−1410.0	−1715.4	−2732.2	−3104.5	−1401.6
	{Ni}	$\Delta \bar{G}^E_{Ni}$	—	—	−2615.0	−3569.0	−5125.4	−2104.6	−146.4
⟨Cr–V⟩	⟨Cr⟩ ⟨V⟩	ΔH	1550	0	−1828.4	−3259.3	−1903.7	−983.2	−849.4
	⟨V⟩	$\Delta \bar{H}_V$	1550	−21,798.6	−15,037.3	−3004.1	3882.8	−3305.4	−112.97

Cr. Chromium alloys: partial and integral excess entropies of solution in J/deg g–atom

System	Components	Thermo-Chemical Function	Temp. (K)	$N_2 =$ 0.0	0.1	0.3	0.5	0.7	0.9
⟨Cr–Co⟩	⟨Cr⟩bcc	ΔS^E	1473	0	3.79	6.19	—	1.78	0.27
	⟨Co⟩fcc	—		(38.07)	17.32	—	—	2.19	0.27
⟨Cr–Fe⟩	⟨Co⟩	$\Delta \bar{S}^E_{Fe}$	1473	0	1.11	2.49	2.88	2.32	0.93
	⟨Cr⟩ ⟨Fe⟩	ΔS^E	1550	—	8.85	5.75	2.54	0.87	0.10
	⟨Fe⟩	$\Delta \bar{S}^E_{Fe}$	1550	—					
{Cr–Fe}	{Cr} {Fe}	ΔS^E	1750–2150	0	1.11	2.49	2.88	2.32	0.93
	{Fe}	ΔS^{ED}_{Fe}	1750–2150	—	8.85	5.75	2.54	0.87	0.10
⟨Cr–Mo⟩	⟨Cr⟩ ⟨Mo⟩	ΔS^E	1200	0	0.86	1.76	1.92	1.38	0.36
⟨Cr–Ni⟩	⟨Cr⟩ ⟨Ni⟩	ΔS^E	—	0	2.77	4.87	4.05	1.79	0.36
	⟨Ni⟩	$\Delta \bar{S}^E_{Ni}$	—	—	21.80	6.40	−2.11	−1.22	0.06
⟨Cr–V⟩	⟨Cr⟩ ⟨V⟩	ΔS^E	1550	0	−0.11	0.13	1.01	0.89	0.02
	⟨V⟩	$\Delta \bar{S}^E_V$	1550	−1.79	−0.51	2.20	3.61	−1.92	−0.04

Cu. Copper alloys: partial and integral heats or excess Gibbs energies of solution in J/g–atom

System	Components	Thermo-Chemical Function	Temp. (K)	$N_2 =$ 0.0	0.1	0.3	0.5	0.7	0.9
{Cu–Ag}	{Cu} {Ag}	ΔH	1423	0	1472.8	3468.5	4242.6	3853.5	1903.7
	{Ag}	$\Delta \bar{H}_{Ag}$	1423	16,317.6	11,556.2	11,556.2	8221.6	2297.0	368.2
{Cu–Al}	{Cu} {Al}	ΔH	1373	0	−3347.2	−8284.3	−9050.0	−6045.9	−1920.5
	{Al}	$\Delta \bar{H}_{Al}$	1373	−36,087.0	−31,024.4	−20,970.2	−4414.1	−251.0	121.34
⟨Cu–Au⟩	⟨Cu⟩ ⟨Au⟩	ΔH	800	0	−1841.0	−4974.8	−5108.7	−3573.1	−1213.4
	⟨Au⟩	$\Delta \bar{H}_{Au}$	800	−16,401.3	−19,497.4	−10,405.6	−2832.6	−422.6	29.29
{Cu–Au}	{Cu} {Au}	ΔH	1550	0	−1707.1	−3828.4	−4368.1	−3510.4	−1435.1
	{Au}	$\Delta \bar{H}_{Au}$	1550	−19,351.0	−15,062.4	−8376.4	−3895.3	−1267.8	−125.5
{Cu–Bi}	{Cu} {Bi}	ΔH	1200	0	—	5121.2	5355.5	4401.6	1958.1
	{Bi}	$\Delta \bar{H}_{Bi}$	1200	—	—	8903.6	4414.1	1887.0	322.2
⟨Cu–Fe⟩	⟨Cu⟩ ⟨Fe⟩	ΔH	1323	0	3907.9	9623.2	12,049.9	10,614.8	4761.4
{Cu–Fe}	{Cu} {Fe}	ΔH	1823	0	3363.9	7489.4	8920.3	8020.7	3974.8
	{Fe}	$\Delta \bar{H}_{Fe}$	1823	38,911.2	29,196.0	16,853.2	9547.9	4820.0	744.8
{Cu–Ge}	{Cu} {Ge}	ΔH	1423	0	−2133.8	−4476.9	−4686.1	−3472.7	−1255.2
{Cu–In}	{Cu} {In}	ΔH	1073	0	—	−3133.8	−1004.2	96.23	276.1
					(N_2=0.2)				
	{In}	$\Delta \bar{H}_{In}$	1073	—	−5970.6	1945.6	3468.5	974.9	167.4
{Cu–Mg}	{Cu} {Mg}	ΔH	1100	0	—	−9560.4	−10,313.6	−8087.7	−3799.1
					(N_2=0.2)				
	{Mg}	$\Delta \bar{H}_{Mg}$	1100	—	−26,857.1	−18,911.7	−7836.6	−3230.0	−870.3

⟨Cu–Mn⟩	⟨Cu⟩⟨Mn⟩γ	ΔH	1100	0	1004.2	2543.9	3196.6	4221.7	3012.5
	⟨Mn⟩γ	$\Delta\bar{G}^E_{Mn}$	1100	−3681.9	−338.9	3054.3	3648.4	2598.3	—
{Cu–Mn}	{Cu}{Mn}	ΔG^E	1500	0	−472.8	405.8	1991.6	3020.8	2146.4
	{Mn}	$\Delta\bar{G}^E_{Mn}$	1500	−8368.0	−1489.5	5924.5	5585.6	3648.4	857.7
⟨Cu–Ni⟩	⟨Cu⟩⟨Ni⟩	ΔH	773	0	543.9	1422.6	1861.9	1945.6	1192.4
	⟨Ni⟩	$\Delta\bar{H}_{Ni}$	773	6192.3	5376.4	3681.9	2510.4	1694.5	376.6
{Cu–Ni}	{Cu}{Ni}	ΔG^E	—	0	1129.7	2845.1	3493.6	3075.2	1318.0
	{Ni}	$\Delta\bar{G}^E_{Ni}$	—	12,426.5	10,250.8	6568.9	3493.6	1318.0	146.4
{Cu–Pb}	{Cu}{Pb}	ΔH	1473	0	2958.1	5949.6	6723.7	5598.2	2443.5
	{Pb}	$\Delta\bar{H}_{Pb}$	1473	36,066.1	24,225.4	11,786.3	6464.3	2397.4	305.4
⟨Cu–Pd⟩	⟨Cu⟩⟨Pd⟩	ΔH	1350	0	−4204.9	−10,209.0	−10,698.5	−8819.9	−3782.3
	⟨Pd⟩	$\Delta\bar{H}_{Pd}$	1350	−45,605.6	−38,802.4	−22,530.8	−8606.5	−3727.9	−418.4
⟨Cu–Pt⟩	⟨Cu⟩⟨Pt⟩	ΔH	1350	0	−5138.0	−10,384.7	−11,087.6	−8280.1	−2882.8
	⟨Pt⟩	$\Delta\bar{H}_{Pt}$	1350	−61,755.8	−42,584.8	−19,589.5	−9075.1	−991.6	−20.92
{Cu–Sb}	{Cu}{Sb}	ΔH	1190	—	—	−5623.3	−2916.2	−631.8	343.1
	{Sb}	$\Delta\bar{H}_{Sb}$	1190	—	(−29,288.0)	−276.1	4573.1	1945.6	338.9
{Cu–Si}	{Cu}{Si}	ΔG^E	1760	0	−5773.9	−11,798.9	−11,757.0	−7865.9	−2677.8
	{Si}	$\Delta\bar{G}^E_{Si}$	1760	−60,542.5	−51,295.8	−20,417.9	−5941.3	−502.1	−41.84
{Cu–Sn}	{Cu}{Sn}	ΔH	1400	0	−2786.5	−3907.9	−1987.4	−405.8	217.6
	{Sn}	$\Delta\bar{H}_{Sn}$	1400	−33,472.0	−21,894.9	1054.4	2849.3	1301.2	205.0
{Cu–Tl}	{Cu}{Tl}	ΔH	1573	0	2707.0	6949.6	8577.2	6619.1	2271.9
	{Tl}	$\Delta\bar{H}_{Tl}$	1573	28,158.3	25,790.2	17,936.8	8497.7	1083.7	−46.02
⟨Cu–Zn⟩	⟨Cu⟩⟨Zn⟩	ΔH	773	0	−2623.4	−7338.7	—	—	—
	⟨Zn⟩	$\Delta\bar{H}_{Zn}$	773	−23,012.0	−28,673.0	−17,363.6	—	—	—
{Cu–Zn}	{Zn}	$\Delta\bar{G}^E_{Zn}$	—	—	—	—	−3631.7	−631.8	4.18
{Cu–O}	$\frac{1}{2}\{O_2\}$	$\Delta\bar{H}_O$	1673	−86,608.8	−95,395.2	−146,858.4	—	—	—

Cu. Copper alloys: partial and integral excess entropies of solution in J/deg g–atom

System	Components	Thermo-Chemical Function	Temp. (K)	$N_2 =$ 0.0	0.1	0.3	0.5	0.7	0.9
{Cu–Ag}	{Cu} {Ag}	ΔS^E	1423	0	0.13	0.34	0.51	0.64	0.44
	{Ag}	$\Delta \bar{S}^E_{Ag}$	1423	1.35	1.23	0.94	0.92	0.73	0.15
{Cu–Al}	{Cu} {Al}	ΔS^E	1373	0	2.05	3.84	3.40	2.57	1.15
	{Al}	$\Delta \bar{S}^E_{Al}$	1373	24.43	17.10	4.30	2.03	0.98	0.18
⟨Cu–Au⟩	⟨Cu⟩ ⟨Au⟩	ΔS^E	800	0	0.25	0.13	0.29	0.34	0.20
	⟨Au⟩	$\Delta \bar{S}^E_{Au}$	800	5.31	0.48	0.21	0.73	0.32	0.05
{Cu–Au}	{Cu} {Au}	ΔS^E	1550	0	0.30	0.79	1.06	1.00	0.47
	{Au}	$\Delta \bar{S}^E_{Au}$	1550	3.04	2.85	2.20	1.37	0.58	0.08
{Cu–Bi}	{Cu} {Bi}	ΔS^E	1200	0	—	1.87	1.82	1.55	0.75
	{Bi}	$\Delta \bar{S}^E_{Bi}$	1200	—	—	2.61	1.40	0.79	0.18
⟨Cu–Fe⟩	⟨Fe⟩ ⟨Cu⟩	ΔS^E	1323	0	1.13	2.64	3.14	2.64	1.13
{Cu–Fe}	{Cu} {Fe}	ΔS^E		0	0.16	0.46	0.68	0.77	0.55
	{Fe}	$\Delta \bar{S}^E_{Fe}$	1823	1.72	1.50	1.49	1.01	0.87	0.18
{Cu–Ge}	{Cu} {Ge}	ΔS^E	14523	0	−0.50	0.50	0.08	0.54	0.54
{Cu–In}	{Cu} {In}	ΔS^E	1073	0	— (N_2=0.2)	−0.24	0.67	0.55	0.36
	{In}	$\Delta \bar{S}^E_{In}$	1073	0	−0.40	2.30	1.68	−0.03	0.01
{Cu–Mg}	{Cu} {Mg}	ΔS^E	1100	0	— (N_2=0.2)	−2.87	−3.23	−2.92	−1.88
	{Mg}	$\Delta \bar{S}^E_{Mg}$	1100	0	−7.50	−5.74	−3.03	−2.18	0.77
⟨Cu–Mn⟩	⟨Cu⟩ ⟨Mn⟩γ	ΔS^E	1100	0	1.08	2.06	1.81	2.03	—
⟨Cu–Ni⟩	⟨Cu⟩ ⟨Ni⟩	ΔS^E		0	−0.36	−0.79	−0.97	−0.64	−0.04
	⟨Ni⟩	$\Delta \bar{S}^E_{Ni}$	—	−3.22	−2.93	−1.97	−0.77	0.17	0.18
{Cu–Pb}	{Cu} {Pb}	ΔS^E	1473	0	0.72	0.98	1.05	0.94	0.46
	{Pb}	$\Delta \bar{S}^E_{Pb}$	1473	10.67	4.59	1.16	1.18	0.52	0.09
⟨Cu–Pd⟩	⟨Cu⟩ ⟨Pd⟩	ΔS^E	1350	0	−0.63	−2.67	−3.54	−4.13	−2.23
	⟨Pd⟩	$\Delta \bar{S}^E_{Pd}$	1350	−4.28	−7.90	−8.96	−5.94	−3.47	−0.46
⟨Cu–Pt⟩	⟨Cu⟩ ⟨Pt⟩	ΔS^E	1350	0	−0.40	−0.75	−0.87	0.52	0.16
	⟨Pt⟩	$\Delta \bar{S}^E_{Pt}$	1350	−5.25	−3.00	−1.46	−1.37	1.11	0.20
{Cu–Sb}	{Cu} {Sb}	ΔS^E	1190	—	—	1.16	2.42	2.38	1.18
	{Sb}	$\Delta \bar{S}^E_{Sb}$	1190	—	1.46	6.64	4.08	1456.0	0.22
{Cu–Sn}	{Cu} {Sn}	ΔS^E	1400	0	1.05	1.67	2.28	2.05	1.03
	{Sn}	$\Delta \bar{S}^E_{Sn}$	1400	16.76	6.18	4.26	2.60	1.16	0.22
{Cu–Tl}	{Cu} {Tl}	ΔS^E	1573	0	0.26	1.20	1.94	1.56	0.46
	{Tl}	$\Delta \bar{S}^E_{Tl}$	1573	1.28	3.56	4.69	2.75	0.04	−0.07
⟨Cu–Zn⟩	⟨Cu⟩ ⟨Zn⟩	ΔS^E	773	0	−0.08	−1.48	—	—	—
	⟨Zn⟩	$\Delta \bar{S}^E_{Zn}$	773	5.44	−5.92	−3.95	—	—	—

Fe. Iron alloys: partial and integral heats or excess Gibbs energies of solution in J/g-atom

System	Components	Thermo-Chemical Function	Temp. (K)	$N_2 =$ 0.0	0.1	0.3	0.5	0.7	0.9
{Fe–Al}	{Fe} {Al}	ΔH	1873	0	−6108.6	−18,949.3	—	—	—
	{Al}	$\Delta \bar{H}_{Al}$	1873	−64,224.4	−58,032.1	−44,120.3	—	—	—
⟨Fe–Au⟩	⟨Fe⟩α⟨Au⟩	ΔH	1123	0	—	—	6066.8	4811.6	2217.5
	⟨Au⟩	$\Delta \bar{H}_{Au}$	1123	—	—	—	3439.2	1828.4	401.7
{Fe–Au}	{Fe} {Au}	ΔH	1383	0	—	—	4309.5	3598.2	1631.8
⟨Fe–Co⟩	⟨Fe⟩⟨Co⟩γ	ΔH	1473	0	−355.6	−974.9	−1313.8	−1129.7	−439.3
	⟨Co⟩γ	$\Delta \bar{H}_{Co}$	1473	−3861.8	−3535.5	−2790.7	−1548.1	−376.6	−25.10
{Fe–Co}	{Fe} {Co}	ΔH	1873	0	−761.5	−1907.9	−2426.7	−2125.5	−916.3
	{Co}	$\Delta \bar{H}_{Co}$	1873	—	−7104.4	−4937.1	−2765.6	−991.6	−96.23
⟨Fe–Cr⟩	⟨Fe⟩⟨Cr⟩	ΔH	1550	0	2259.4	5271.8	6276.0	5271.8	2259.4
	⟨Cr⟩	$\Delta \bar{H}_{Cr}$	1550	25,104.0	20,334.2	12,301.0	6276.0	2259.4	251.0
{Fe–Cr}	{Fe} {Cr}	ΔH	—	0	1924.6	4372.3	5209.1	4393.2	1903.7
	{Cr}	$\Delta \bar{H}_{Cr}$	—	21,610.4	16,987.0	10,083.4	5230.0	1924.6	209.2
⟨Fe–Cu⟩	⟨Fe⟩⟨Cu⟩	ΔH	1323	0	4761.4	10,614.8	12,049.9	9623.2	3907.9
{Fe–Cu}	{Fe} {Cu}	ΔH	1823	0	3974.8	8020.7	8920.3	7485.2	3363.9
	{Cu}	$\Delta \bar{H}_{Cu}$	1823	47,572.1	33,041.0	15,489.2	8292.7	3472.7	493.7
{Fe–Ge}	⟨Fe⟩{Ge}	ΔH	1287	0	—	—	8953.8	4853.4	1841.0
⟨Fe–Ir⟩	⟨Fe⟩γ⟨Ir⟩	ΔG^E	1473	0	−5296.9	−12,685.9	−14,003.8	−10,732.0	−4225.8
	⟨Ir⟩	$\Delta \bar{G}^E_{Ir}$	1473	−56,316.6	−49,203.8	−28,129.0	−10,782.2	−3163.1	−297.1
⟨Fe–Mn⟩	⟨Fe⟩γ⟨Mn⟩γ	ΔH	1450	0	−1313.8	−6200.7	−6916.2	−6091.9	−3330.5
	⟨Mn⟩γ	$\Delta \bar{H}_{Mn}$	1450	−13,999.7	−12,351.2	−9585.5	−6602.4	−3217.5	−468.6

System	Components	Thermo-Chemical Function	Temp. (K)	N_2 = 0.0	0.1	0.3	0.5	0.7	0.9
{Fe–Mn}	{Fe}{Mn}	ΔG^E	1863	0	397.5	924.7	1100.4	924.7	397.5
	{Mn}	$\Delta \bar{G}^E_{Mn}$	1863	4393.2	3560.6	2154.8	1100.4	397.5	46.02
⟨Fe–Ni⟩	⟨Fe⟩γ⟨Ni⟩	ΔH	1200	0	−962.3	−1945.6	−3702.8	−4184.0	−2075.3
	⟨Ni⟩	$\Delta \bar{H}_{Ni}$	1200	—	−4309.5	−8828.2	−5983.1	−3933.0	−334.7
{Fe–Ni}	{Fe}{Ni}	ΔH	1873	0	−1025.1	−2928.8	−4602.4	−4853.4	−2426.7
	{Ni}	$\Delta \bar{H}_{Ni}$	1873	−10,041.6	−9761.3	−9723.6	−7213.2	−3832.5	−205.0
⟨Fe–Pd⟩	⟨Fe⟩γ⟨Pd⟩	ΔH	1273	0	1702.9	−2836.8	−9443.3	−12,020.6	−6317.8
	⟨Pd⟩	$\Delta \bar{H}_{Pd}$	1273	36,107.9	907.9	−26,078.9	−23,597.8	−10,116.9	−1188.3
{Fe–Pd}	{Fe}{Pd}	ΔH	1873	0	1029.3	1941.4	2217.5	2000.0	916.3
	{Pd}	$\Delta \bar{H}_{Pd}$	1873	21,966.0	6652.6	3899.5	2301.2	1146.4	117.15
⟨Fe–Pt⟩	⟨Fe⟩γ⟨Pt⟩	ΔG^E	1123	0	−5723.7	−13,982.9	$-18{,}175.3_2$	$-13{,}706.8_3$	−6656.7
	⟨Pt⟩	$\Delta \bar{G}^E_{Pt}$	1123	−75,814.1	−49,136.9	−37,530.5	$-18{,}911.7_2$	-3577.3_3	0
{Fe–Pt}	{Fe}{Pt}	ΔG^E	1880	0	−7447.5	−21,505.8	−29,170.8	—	—
	{Pt}	$\Delta \bar{G}^E_{Pt}$	1880	−66,944.0	−78,002.3	−62,521.5	−34,656.1	—	—
{Fe–S}	(S_2)	$\Delta \bar{H}_{S_2}$	—	−253,132.0	−251,458.4	−247,692.8	−240,161.6	—	—
{Fe–Si}	{Fe}{Si}	ΔH	1873	0	−12,761.2	−33,388.3	−37,865.2	−28,032.8	−10,250.8
	{Si}	$\Delta \bar{H}_{Si}$	1873	−131,377.6	−125,101.6	−81,169.6	−27,823.6	−5606.6	−376.6
{Fe–Sn}	{Fe}{Sn}	ΔG^E	1820	0	1535.5	4238.4	—	—	—
	{Sn}	$\Delta \bar{G}^E_{Sn}$	1820	15,581.2	15,087.5	12,405.6	—	—	—
⟨Fe–V⟩	⟨Fe⟩α⟨V⟩	ΔH	1600	0	−1301.2	−3589.9	−5242.6	−5535.4	−2213.3
	⟨V⟩	$\Delta \bar{H}_V$	1600	−12,928.6	−12,510.2	−10,593.9	−8535.4	−2200.8	−276.1
{Fe–V}	{Fe}{V}	ΔF^E	2193	0	−941.4	−2761.4	−4481.1	−5188.2	−2736.3
	{V}	$\Delta \bar{G}^E_V$	2193	−10,669.2	−10,020.7	−8660.9	−7740.4	−4518.7	−502.1

Fe. Iron alloys: partial and integral excess entropies of solution in J/deg g–atom

System	Components	Thermo-Chemical Function	Temp. (K)	N_2 = 0.0	0.1	0.3	0.5	0.7	0.9
{Fe–Al}	{Fe} {Al}	ΔS^E	1873	0	−1.13	−3.51	—	—	—
	{Al}	$\Delta \bar{S}^E_{Al}$	1873	−10.56	−11.76	−11.32	—	—	—
{Fe–Au}	{Fe} {Au}	ΔS^E	1383	—	—	—	—	2.51	1.59
⟨Fe–Co⟩	—	—	—	—	—	—	—	—	—
{Fe–Co}	—	—	—	—	—	—	—	—	—
⟨Fe–Cr⟩	⟨Fe⟩ ⟨Cr⟩	ΔS^E	1550	0	0.93	2.32	2.88	2.49	1.11
	⟨Cr⟩	$\Delta \bar{S}^E_{Cr}$	1550	10.25	8.41	5.69	3.22	1.09	0.21
{Fe–Cr}	{Fe} {Cr}	ΔS^E	1750–2150	0	0.93	2.32	2.88	2.49	1.11
	{Cr}	$\Delta \bar{S}^E_{Cr}$	1750–2150	10.25	8.41	5.69	3.22	1.09	0.21
⟨Fe–Cu⟩	⟨Fe⟩γ⟨Cu⟩	ΔS^E	1323	0	1.13	2.64	3.14	2.64	1.13
	⟨Cu⟩	$\Delta \bar{S}^E_{Cu}$	1323	12.55	10.17	6.15	3.14	1.13	0.13
{Fe–Cu}	{Fe} {Cu}	ΔS^E	1823	0	0.16	0.46	0.68	0.77	0.55
	{Cu}	$\Delta \bar{S}^E_{Cu}$	1823	7.36	3.84	0.56	0.35	0.02	0.01
⟨Fe–Mn⟩	⟨Fe⟩γ⟨Mn⟩γ	ΔS^E	1450	0	−1.24	−3.17	−4.26	−4.11	−2.05
	⟨Mn⟩γ	$\Delta \bar{S}^E_{Mn}$	1450	−13.26	−11.55	−8.59	−5.65	−2.68	−0.39
⟨Fe–Ni⟩	⟨Fe⟩γ⟨Ni⟩	ΔS^E	1200	0	−0.25	−0.29	−0.81	−1.04	−0.56
	⟨Ni⟩	$\Delta \bar{S}^E_{Ni}$	1200	—	1.22	−1.79	−1.13	−1.31	−0.26
{Fe–Ni}	{Fe} {Ni}	ΔS^E	1873	0	−0.21	−0.64	−1.10	−1.24	−0.74
	{Ni}	$\Delta \bar{S}^E_{Ni}$	1873	−2.13	−2.13	−2.35	−1.76	−1.16	−0.18
⟨Fe–Pd⟩	⟨Fe⟩γ⟨Pd⟩	ΔS^E	1273	0	2.56	3.42	2.88	1.93	0.69
	⟨Pd⟩	$\Delta \bar{S}^E_{Pd}$	1273	35.79	16.92	2.79	0.88	0.29	0.00
{Fe–Pd}	{Fe} {Pd}	ΔS^E	1873	0	−0.12	−0.47	−0.56	−0.41	−0.14
	{Pd}	$\Delta \bar{S}^E_{Pd}$	1873	3.15	−2.15	−1.27	−0.46	−0.05	−0.00
{Fe–S}	(S_2)	$\Delta \bar{S}^E_{S_2}$	—	−53.35	−48.95	−43.05	−70.21	—	—
{Fe–Si}	$Fe} {Si}	ΔS^E	1873	0	−2.09	−6.90	−8.62	−7.15	−2.79
	{Si}	$\Delta \bar{S}^E_{Si}$	1873	−17.51	−23.72	−19.71	−8.97	−2.55	−0.17
⟨Fe–V⟩	⟨Fe⟩α⟨V⟩	ΔS^E	1600	0	−0.53	−1.38	−1.62	−1.10	−0.13
	⟨V⟩	$\Delta \bar{S}^E_{V}$	1600	14.23	8.64	2.31	−1.43	−0.52	−0.18

Mg. Magnesium alloys: partial and integral heats or excess Gibbs energies of solution in J/g-atom

System	Components	Thermo-Chemical Function	Temp. (K)	$N_2 =$ 0.0	0.1	0.3	0.5	0.7	0.9
{Mg–Al}	{Ag}{Al}	ΔH	1073	0	−962.3	−2569.0	−3372.3	−3012.5	−1305.4
	{Al}	$\Delta \bar{H}_{Al}$	1073	−9865.9	−9317.8	−7033.3	−4066.8	−1464.4	−133.9
{Mg–Bi}	{Mg}{Bi}	ΔH	1100	0	−7740.4	−18,828.0	−18,953.5	−12,552.0	−3138.0
	{Bi}	$\Delta \bar{H}_{Bi}$	1100	—	−69,872.8	−35,020.1	−10,920.2	2887.0	418.4
{Mg–Ca}	{Mg}{Ca}	ΔH	1110	0	(−4937.1)	−7949.6	−7154.6	−4686.1	−1673.6
	{Ca}	$\Delta \bar{H}_{Ca}$	1110	—	—	−9874.2	−2552.2	−418.4	−62.76
⟨Mg–Cd⟩	⟨Mg⟩⟨Cd⟩	ΔH	543	0	−1661.0	−4460.1	−5531.2	−4217.5	−1422.6
	⟨Cd⟩	$\Delta \bar{H}_{Cd}$	543	−16,861.5	−16,192.1	−12,029.0	−5146.3	−761.5	71.13
{Mg–Cd}	{Mg}{Cd}	ΔH	923	0	−2025.1	−4610.8	−5610.7	−4698.6	−1924.6
	{Cd}	$\Delta \bar{H}_{Cd}$	923	−23,313.2	−17,685.8	−10,899.3	−5861.8	−1845.1	−150.6
{Mg–Cu}	{Mg}{Cu}	ΔH	1100	0	−3799.1	−8087.7	−13,100.1	−11,987.2	—
		$\Delta \bar{H}_{Cu}$	1100	−49,203.8	−30,149.9	−19,422.1	−12,786.3	−5552.2	—
{Mg–In}	{Mg}{In}	ΔH	923	0	−2807.5	−6778.1	−6870.1	−4736.3	−1807.5
	{In}	$\Delta \bar{H}_{In}$	923	−29,664.6	−26,384.3	−14,372.0	−3158.9	−920.5	−117.15
{Mg–Li}	{Mg}{Li}	ΔH	1000	0	−1518.8	−4610.8	−5368.1	−3585.7	−1092.0
	{Li}	$\Delta \bar{H}_{Li}$	1000	−12,635.7	−16,694.2	−12,560.4	−3288.6	−46.02	108.78
{Mg–Ni}	{Ni}	$\Delta \bar{G}^{E}_{Ni}$	1000	−41,936.2	−21,162.7	—	—	—	—
{Mg–Pb}	{Mg}{Pb}	ΔH	973	0	−3953.9	−9581.4	−9388.9	−6150.5	−2071.1
	{Pb}	$\Delta \bar{H}_{Pb}$	973	−39,748.0	−38,212.5	−19,058.1	−3895.3	−288.7	0
{Mg–Sb}	{Mg}{Sb}	ΔH	1100	0	−21,966.0	−52,718.4	−46024.0	−21,338.4	−6903.6
		$\Delta \bar{H}_{Sb}$	1100	—	−183,677.6	−107,528.8	51,044.8	2510.4	−83.68
{Mg–Sn}	{Mg}{Sn}	ΔG^{E}	1073	0	−6723.7	−13,765.4	−14,162.8	−10,083.4	−3564.8
	{Sn}	$\Delta \bar{G}^{E}_{Sn}$	1073	−79,307.7	−56,768.5	−25,501.5	−8660.9	−1644.3	−29.29
{Mg–Tl}	{Mg}{Tl}	ΔH	923	0	−2769.8	−11,129.4	−12,581.3	−10,091.8	−4518.7
	{Tl}	$\Delta \bar{H}_{Tl}$	923	−26,568.4	−26,568.4	−12,936.9	−2928.8	0	117.15
{Mg–Zn}	{Mg}{Zn}	ΔH	923	0	−2092.0	−4853.4	−6380.6	−5857.6	−2887.0
	{Zn}	$\Delta \bar{H}_{Zn}$	923	−21,756.8	−18,409.6	−11,798.9	−8033.3	−3389.0	−648.5

Mg. Magnesium alloys: partial and integral excess entropies of solution in J/deg g–atom

System	Components	Thermo-Chemical Function	Temp. (K)	$N_2 =$ 0.0	0.1	0.3	0.5	0.7	0.9
{Mg–Al}	{Mg} {Al}	ΔS^E	1073	0	−0.36	−0.82	−0.83	−0.44	0.00
	{Al}	$\Delta \bar{S}^E_{Al}$	1073	−3.86	−3.29	−1.66	−0.31	0.32	0.12
{Mg–Bi}	{Mg} {Bi}	ΔS^E	1100	0	−4.20	−9.48	−8.47	−4.96	−1.90
	{Bi}	$\Delta \bar{S}_{Bi}$	1100	—	−39.85	−11.46	−8.68	0.96	−0.48
{Mg–Ca}	{Mg} {Ca}	ΔS^E	1110	0	(−1.30)	−2.68	−2.41	−1.57	−0.54
	{Ca}	$\Delta \bar{S}^E_{Ca}$	1110	—	—	−3.68	−0.75	−0.13	0
⟨Mg–Cd⟩	⟨Mg⟩ ⟨Cd⟩	ΔS^E	543	0	−0.33	−1.06	−1.30	−0.61	0.09
	⟨Cd⟩	$\Delta \bar{S}^E_{Cd}$	543	−3.17	−3.49	−3.33	−0.59	0.77	0.21
{Mg–Cd}	{Mg} {Cd}	ΔS^E	923	0	−0.57	−0.94	−1.05	−0.88	−0.38
	{Cd}	$\Delta \bar{S}^E_{Cd}$	923	−8.05	−4.00	−1.51	−1.05	−0.38	−0.04
{Mg–Cu}	{Mg} {Cu}	ΔS^E	1100	0	−1.88	−2.92	−3.23	−2.87	—
	{Cu}	$\Delta \bar{S}^E_{Cu}$	1100	−28.89	−11.84	−4.64	−3.43	−1.65	—
{Mg–In}	{Mg} {In}	ΔS^E	923	0	0.22	−0.71	−0.41	0.35	0.41
	{In}	$\Delta \bar{S}^E_{In}$	923	6.87	−1.32	−3.08	1.87	0.95	0.27
{Mg–Li}	{Mg} {Li}	ΔS^E	1000	0	−0.50	−1.41	−0.77	−0.83	−1.00
	{Li}	$\Delta \bar{S}^E_{Li}$	1000	−3.46	−5.81	−2.51	3.10	2.60	0.44
{Mg–Pb}	{Mg} {Pb}	ΔS^E	973	0	0.57	−0.62	−0.58	−0.23	−0.20
	{Pb}	$\Delta \bar{S}^E_{Pb}$	973	14.42	−0.63	−3.67	0.27	−0.06	−0.12
{Mg–Sb}	{Mg} {Sb}	ΔS^E	1100	0	−10.92	−22.43	−12.30	−1.67	0.21
	{Sb}	ΔS^E_{Sb}	1100	—	−72.80	−2.93	25.90	4.06	4.23
{Mg–Tl}	{Mg} {Ti}	ΔS^E	923	0	−0.12	−0.22	0.73	1.18	0.77
	{Tl}	$\Delta \bar{S}^E_{Tl}$	923	1.81	−1.88	2.22	2.64	1.36	0.22
{Mg–Zn}	{Mg} {Zn}	ΔS^E	923	0	−1.05	−2.15	−2.78	—	−1.19
	{Zn}	$\Delta \bar{S}^E_{Zn}$	923	−8.54	−7.74	−5.40	−3.60	−1.34	−0.21

Na. Sodium alloys: partial and integral heats or excess Gibbs energies of solution in J/g-atom

System	Components	Thermo-Chemical Function	Temp. (K)	$N_2 =$ 0.0	0.1	0.3	0.5	0.7	0.9
{Na–Bi}	{Na} {Bi}	ΔH	1173	0	−16,652.3	−41,337.9	−30,375.8	−18,242.2	−4497.8
	{Bi}	$\Delta \bar{H}_{Bi}$	1173	—	−182,422.4	−8493.5	−7991.4	3138.0	1046.0
{Na–Cd}	{Na} {Cd}	ΔH	673	0	−142.3	−1217.5	−3138.0	−4606.6	−3092.0
	{Cd}	$\Delta \bar{H}_{Cd}$	673	−230.1	−2694.5	−6681.8	−7907.8	−5422.5	−669.4
{Na–Cs}	{Na} {Cs}	ΔH	384	0	606.7	995.8	916.3	619.2	217.6
	{Cs}	$\Delta \bar{H}_{Cs}$	384	4895.3	3577.3	1581.6	368.2	66.94	12.55
{Na–Ga}	{Na} {Ga}	ΔG^E	823	0	1096.2	1255.2	301.2	−878.6	−870.3
	{Ga}	$\Delta \bar{G}^E_{Ga}$	823	—	4811.6	−949.8	−2920.4	−2008.3	−343.1
{Na–Hg}	{Na} {Hg}	ΔH	648	0	−5230.0	−16,192.1	−25,438.7	−25,396.9	−8409.8
	{Hg}	$\Delta \bar{H}_{Hg}$	648	−49,371.2	−53,889.9	−53,973.6	−42,383.9	−7949.6	0
{Na–In}	{Na} {In}	ΔH	713	0	−1874.4	−5744.6	−8472.6	−7388.9	−2811.6
	{In}	$\Delta \bar{H}_{In}$	713	−17,572.8	−19,518.4	−18,200.4	−12,552.0	−1928.8	−133.9
{Na–K}	{Na} {K}	ΔH	384	0	318.0	677.8	740.6	560.7	213.4
	{K}	$\Delta \bar{H}_{K}$	384	3640.1	2719.6	1380.7	564.8	150.6	8.37
{Na–Pb}	{Na} {Pb}	ΔH	700	0	−6753.0	−16,384.5	−16,246.5	−11,246.6	−3895.3
	{Pb}	$\Delta \bar{H}_{Pb}$	700	−64,852.0	−69,036.0	−27,765.0	−8640.0	−1359.8	0
{Na–Rb}	{Na} {Rb}	ΔH	384	0	598.3	1188.3	1230.1	907.9	334.7
	{Rb}	$\Delta \bar{H}_{Rb}$	384	6527.0	4665.2	2104.6	828.4	205.0	12.55
{Na–Sn}	{Na} {Sn}	ΔH	773	0	−6694.4	−17,489.1	−19,371.9	−12,091.8	−3535.5
{Na–Tl}	{Na} {Tl}	ΔH	673	0	−3276.1	−8811.5	−11,443.2	−9154.6	−3363.9
	{Tl}	$\Delta \bar{H}_{Tl}$	673	−33,472.0	−31,823.5	−24,376.0	−11,911.8	−2502.0	−33.47

Na. Sodium alloys: partial and integral excess entropies of solution in J/deg g–atom

System	Components	Thermo-Chemical Function	Temp. (K)	N_2= 0.0	0.1	0.3	0.5	0.7	0.9
{Na–Bi}	{Na} {Bi}	ΔS^E	1173	0	−4.87	−13.37	−6.05	−1.32	1.82
	{Bi}	$\Delta \bar{S}^E_{Bi}$	1173	0	−65.69	19.96	3.35	6.90	1.55
{Na–Cd}	{Na} {Cd}	ΔS^E	673	0	−0.67	−2.09	−3.77	−4.64	−2.90
	{Cd}	$\Delta \bar{S}^E_{Cd}$	673	−7.24	−6.67	−7.56	−7.21	−4.56	−0.50
{Na–Cs}	{Na} {Cg}	ΔS^E ΔS^E	384	0	0	0	0	0	0
{Na–Hg}	{Na} {Hg}	ΔS^E	648	0	−2.76	−10.50	−18.66	−19.83	−4.23
	{Hg}	$\Delta \bar{S}^E_{Hg}$	648	−21.84	−31.97	−40.12	−37.20	−1.21	1.13
{Na–In}	{Na} {In}	ΔS^E	713	0	−2.09	−4.98	−6.53	−5.32	−1.82
	{In}	$\Delta \bar{S}^E_{In}$	713	−23.43	−18.79	−12.44	−9.22	−0.33	0
{Na–K}	{Na} {K}	ΔS^E	384	0	0	0	−0.21	−0.46	−0.46
	{K}	$\Delta \bar{S}^E_{K}$	384	0	0	−0.54	−0.79	−0.67	−0.40
{Na–Pb}	{Na} {Pb}	ΔS^E	700	0	−2.94	−7.42	−5.90	−3.15	−0.83
	{Pb}	$\Delta \bar{S}^E_{Pb}$	700	−24.33	−34.06	−6.97	0.42	0.97	0.11
{Na–Rb}	{Na} {Rb}	ΔS^E ΔS^E	384	0	0	0	0	0	0
{Na–Sn}	{Na} {Sn}	ΔS^E		0	−3.28	−8.60	−0.93	−5.13	−2.11
{Na–Tl}	{Na} {Tl}	ΔS^E		0	−1.62	−3.84	−4.45	−2.69	−0.50
	{Tl}	$\Delta \bar{S}^E_{Tl}$	673	−18.02	−14.61	−9.23	−2.39	0.86	0.29

Ni. Nickel alloys: partial and integral heats or excess Gibbs energies of solution in J/g-atom

System	Components	Thermo-Chemical Function	Temp. (K)	$N_2 =$ 0.0	0.1	0.3	0.5	0.7	0.9
⟨Ni–Al⟩	⟨Ni⟩⟨Al⟩	ΔH	298	0	−15,271.6	—	−58,785.2	—	—
	⟨Ni⟩⟨Al⟩	ΔG^E	1273	0	−12,656.6	—	−46,881.7	—	—
	⟨Al⟩	$\Delta \bar{G}^E_{Al}$	1273	−144,933.8	−109,746.3	—	−41,066.0	—	—
⟨Ni–Au⟩	⟨Ni⟩⟨Au⟩	ΔH	1150	0	2690.3	6727.9	7560.5	5635.8	2092.0
	⟨Au⟩	$\Delta \bar{H}_{Au}$	1150	27,698.1	25,832.0	15,447.3	5765.6	1292.9	75.31
{Ni–Au}	{Ni}{Au}	ΔH	1369	0	—	—	2150.6	1807.5	774.0
Ni–Co					this system is nearly ideal in the solid and liquid states				
⟨Ni–Cr⟩	⟨Ni⟩⟨Cr⟩	ΔH	—	0	−878.6	1405.8	6359.7	8987.2	4866.0
	⟨Cr⟩	$\Delta \bar{H}_{Cr}$	—	−17,572.8	−878.6	15,648.2	20,794.5	8426.6	937.2
{Ni–Cr}	{Ni}{Cr}	ΔG^E	—	0	−1401.6	−3104.5	−2732.2	−1715.4	−1410.0
	{Cr}	$\Delta \bar{G}^E_{Cr}$	—	−15,376.2	−12,706.8	−5439.2	−338.9	−920.5	−1276.1
⟨Ni–Cu⟩	⟨Ni⟩⟨Cu⟩	ΔH	—	0	1192.4	1945.6	1861.9	1422.6	543.9
	⟨Cu⟩	$\Delta \bar{H}_{Cu}$	—	16,485.0	8660.9	2531.3	1213.4	460.2	12.55
{Ni–Cu}	{Ni}{Cu}	ΔG^E	—	0	1318.0	3075.2	3493.6	2845.1	1129.7
	{Cu}	$\Delta \bar{G}^E_{Cu}$	—	14,644.0	11,840.7	7175.6	3493.6	1255.2	125.5
⟨Ni–Fe⟩	⟨Ni⟩⟨Fe⟩γ	ΔH	1200	0	−2075.3	−4184.0	−3702.8	−1945.6	−962.3
	⟨Fe⟩γ	$\Delta \bar{H}_{Fe}$	1200	−24,267.2	−17,572.8	−4769.8	−1422.6	1004.2	−585.8
{Ni–Fe}	{Ni}{Fe}	ΔH	1873	0	−2426.7	−4853.4	−4602.4	−2928.8	−1025.1
	{Fe}	$\Delta \bar{H}_{Fe}$	—	−32,216.8	−22,648.0	−7246.7	−1987.4	−16.74	−54.39
{Ni–Ge}	{Ni}{Fe}	ΔH	1287	0	—	—	−54,768.6	−36,191.6	−12,342.8
⟨Ni–Mn⟩	⟨Ni⟩⟨Mn⟩β	ΔH	1050	0	−5418.3	−12,970.4	−14,213.0	−6828.3	—
	⟨Mn⟩β	$\Delta \bar{H}_{Mn}$	1050	−60,145.0	−48,890.0	−29,526.5	−7656.7	4686.1	—
⟨Ni–Pd⟩	⟨Ni⟩⟨Pd⟩	ΔH	1273	0	548.1	351.5	−535.6	−1179.9	−845.2
	⟨Pd⟩	$\Delta \bar{H}_{Pd}$	1273	8468.4	3054.3	−2200.8	−2778.2	−1606.7	−280.3
{Ni–Pd}	{Ni}{Pd}	ΔH	1873	0	682.0	1066.9	1196.6	987.4	422.6
	{Pd}	$\Delta \bar{H}_{Pd}$	1873	11,673.4	4158.9	1937.2	1121.3	410.0	50.21
⟨Ni–Pt⟩	⟨Ni⟩⟨Pt⟩	ΔH	298	0	−2723.8	−7811.5	−9263.4	−7238.3	−3188.2
	⟨Ni⟩⟨Pt⟩	ΔG^E1625	0	−3564.8	−7782.2	−8619.0	−6698.6	−2640.1	
	⟨Pt⟩	$\Delta \bar{G}^E_{Pt}$	1625	−40,919.5	−31,057.8	−16,263.2	−7008.2	−2058.5	−175.7
{Ni–Si}	{Ni}{Si}	ΔH	1873	0	−18,786.2	−52,885.8	−55,354.3	−36,735.5	12,761.2
	{Si}	$\Delta \bar{H}_{Si}$	1873	−188,280.0	−187,024.8	−140,164.0	−23,430.4	−3430.9	−167.4
{Ni–Sn}	{Ni}{Sn}	ΔH	1773	0	−10,460.0	−18,409.6	−17,154.4	−10,460.0	−4602.4
⟨Ni–Zn⟩	⟨Ni⟩⟨Zn⟩	ΔG^E	1100	0	−3652.6	−9020.7	−12,535.3	—	—
	⟨Zn⟩	$\Delta \bar{G}^E_{Zn}$	1100	−38,969.8	−34,170.7	−22,878.1	−14,581.2	—	—

Ni. Nickel alloys: partial and integral excess entropies of solution in J/deg g–atom

System	Components	Thermo-Chemical Function	Temp. (K)	$N_2 =$ 0.0	0.1	0.3	0.5	0.7	0.9
⟨Ni–Au⟩	⟨Au⟩⟨Ni⟩	ΔS^E	1150	0	0.67	2.35	2.79	1.92	0.58
	⟨Au⟩	$\Delta \bar{S}^E_{Au}$	1150	4.77	8.19	6.59	2.02	0.03	−0.06
⟨Ni–Cr⟩	⟨Ni⟩⟨Cr⟩	ΔS^E	—	0	0.36	1.79	4.05	4.87	2.77
	⟨Cr⟩	$\Delta \bar{S}^E_{Cr}$	—	−2.82	3.10	8.82	10.20	4.21	1.36
⟨Ni–Cu⟩	⟨Ni⟩⟨Cu⟩	ΔS^E	—	0	−0.04	−0.64	−0.97	−0.79	−0.36
	⟨Cu⟩	$\Delta \bar{S}^E_{Cu}$	—	4.70	−2.03	−2.55	−0.98	−0.29	−0.07
⟨Ni–Fe⟩	⟨Ni⟩⟨Fe⟩γ	ΔS^E	1200	0	−0.56	−1.04	−0.81	0.29	−0.25
	⟨Fe⟩γ	$\Delta \bar{S}^E_{Fe}$	1200	−5.02	−3.30	−0.88	−0.50	0.36	−0.41
{Ni–Fe}	{Ni}{Fe}	ΔS^E	1873	0	−0.74	−1.24	−1.10	−0.64	−0.21
	{Fe}	$\Delta \bar{S}^E_{Fe}$	1873	−9.20	−5.86	−1.42	−0.42	0.08	0
⟨Ni–Mn⟩	⟨Ni⟩⟨Mn⟩β	ΔS^E	1050	0	−0.69	−2.30	−2.07	1.22	—
	⟨Mn⟩γ	$\Delta \bar{S}^E_{Mn}$	1050	−7.11	−6.91	−6.38	3.35	6.28	—
⟨Ni–Pd⟩	⟨Ni⟩⟨Pd⟩	ΔS^E	1273	0	0.69	1.57	1.79	1.38	0.49
	⟨Pd⟩	$\Delta \bar{S}^E_{Pd}$	1273	7.85	6.17	3.46	1.54	0.33	−0.01
{Ni–Pd}	{Ni}{Pd}	ΔS^E	1873	0	−0.01	−0.28	−0.36	−0.28	−0.11
	{Pd}	$\Delta \bar{S}^E_{Pd}$	1873	1.90	−1.08	−0.90	−0.33	−0.08	−0.00
⟨Ni–Pt⟩	⟨Ni⟩⟨Pt⟩	ΔS^E	1625	0	0.52	−0.02	−0.40	−0.33	−0.34
{Ni–Si}	{Ni}{Si}	ΔS^E	1873	0	−2.72	−10.25	−11.59	−7.70	−2.30
	{Si}	$\Delta \bar{S}^E_{Si}$	1873	−23.01	−31.30	−33.47	−6.44	−0.17	0.33

Pb. Lead alloys: partial and integral heats or excess Gibbs energies of solution in J/g–atom

System	Components	Thermo-Chemical Function	Temp. (K)	$N_2 =$ 0.0	0.1	0.3	0.5	0.7	0.9
{Pb–Ag}	{Pb} {Ag}	ΔH	1273	0	1146.4	2974.8	3702.8	2912.1	1054.4
	{Ag}	$\bar{H}_{Ag}$	1273	11,715.2	11,045.8	7761.3	3727.9	728.0	4.18
{Pb–Al}	{Pb} {Al}	ΔH	—	0	2443.5	6665.1	9355.4	8907.7	3866.0
{Pb–Au}	{Pb} {Au}	ΔH	1200	0	259.4	−305.4	−698.7	−790.8	−435.1
	{Au}	$\Delta \bar{H}_{Au}$	1200	221.8	−477.0	−2301.2	−1301.2	−640.2	−146.4
{Pb–Bi}	{Pb} {Bi}	ΔH	700	0	−334.7	−878.6	−1108.8	−899.6	−334.7
	{Bi}	$\Delta \bar{H}_{Bi}$	700	−3514.6	−3263.5	−2301.2	−1108.8	−292.9	−20.92
{Pb–Cd}	{Pb} {Cd}	ΔH	773	0	857.7	2100.4	2656.8	2447.6	1242.6
	{Cd}	$\Delta \bar{H}_{Cd}$	773	9330.3	7891.0	5280.2	3142.2	1477.0	288.7
{Pb–Cu}	{Pb} {Cu}	ΔH	1473	0	2443.5	5598.2	6723.7	5949.6	2958.1
	{Cu}	ΔH_{Cu}	1473	27,614.4	21,689.9	13,058.3	−6987.3	3447.6	598.3
{Pb–Ga}	{Pb} {Ga}	ΔH	923	0	1635.9	3297.0	3832.5	3585.7	1882.8
		$\Delta \bar{H}_{Ga}$	923	20,208.7	13,305.1	6673.5	4259.3	2410.0	431.0
{Pb–Hg}	{Pb} {Hg}	ΔH	600	0	−142.3	−75.31	196.6	464.4	384.9
	{Hg}	$\Delta \bar{H}_{Hg}$	600	−2322.1	−723.8	652.7	962.3	728.0	154.8
⟨Pb–In⟩	⟨In⟩ ⟨Pb⟩	ΔH	315	0	418.4	1046.0	1297.0	1129.7	0
{Pb–In}	{Pb} {In}	ΔH	315	0	326.4	778.2	949.8	815.9	355.6
	{In}	$\Delta \bar{H}_{In}$	673	3999.9	2974.8	1878.6	1000.0	376.6	41.84
{Pb–K}	{Pb} {K}	ΔH	848	0	−5154.7	−14,359.5	−19,756.8	−17,694.1	−6221.6
	{K}	$\Delta \bar{H}_{K}$	848	−51,530.1	−50,910.9	−41,250.1	−29,288.0	−5238.4	259.4
{Pb–Mg}	{Pb} {Mg}	ΔH	973	0	−2071.1	−6150.5	−9388.9	−9577.2	−3953.9
	{Mg}	$\Delta \bar{H}_{Mg}$	973	−20,920.0	−20,710.8	−19,823.8	−14,878.3	−5514.5	−146.4
{Pb–Na}	{Pb} {Na}	ΔH	700	0	−3895.3	−11,246.6	−16,246.5	−16,384.5	−6753.0
	{Na}	$\Delta \bar{H}_{Na}$	700	−38,492.8	−39,036.7	−34,308.8	−23,848.8	−11,506.0	167.4
{Pb–Pt}	{Pb} {Pt}	ΔG^E	1273	0	−3033.4	−7301.1	−8957.9	—	—
	{Pt}	$\Delta \bar{G}^E_{Pt}$	1273	−33,296.3	−27,656.2	−17,957.7	−9225.7	—	—
{Pb–Sb}	{Pb} {Sb}	ΔH	905	0	0	−33.47	−66.94	−50.21	−8.37
	{Sb}	$\Delta \bar{H}_{Sb}$	905	133.9	−75.31	−188.3	−92.05	12.55	8.37
{Pb–Sn}	{Pb} {Sn}	ΔH	1050	0	543.9	1192.4	1368.2	1146.4	502.1
	{Sn}	$\Delta \bar{H}_{Sn}$	1050	6276.0	4677.7	2573.2	1305.4	510.4	62.76
⟨Pb–Tl⟩	⟨Pb⟩ ⟨Tl⟩β	ΔH	523	0	−468.6	−1309.6	−1937.2	−2066.9	—
	⟨Tl⟩β	$\Delta \bar{H}_{Tl}$	523	−4895.3	−4497.8	−3974.8	−2928.8	−1732.2	—
{Pb–Tl}	{Pb} {Tl}	ΔH	773	0	−326.4	−836.8	−1054.4	−882.8	−368.2
	{Tl}	$\Delta \bar{H}_{Tl}$	773	−3430.9	−3112.9	−2175.7	−1121.3	−359.8	−33.47
{Pb–Zn}	{Pb} {Zn}	ΔH	—	0	2238.4	5690.2	7531.2	7301.1	3891.1
	{Zn}	$\Delta \bar{H}_{Zn}$	—	—	20,961.8	15,083.3	9790.6	4769.8	753.1

Pb. Lead alloys: partial and integral excess entropies of solution in J/deg g–atom

System	Components	Thermo-Chemical Function	Temp. (K)	$N_2 =$ 0.0	0.1	0.3	0.5	0.7	0.9
{Pb–Ag}	{Pb} {Ag}	ΔS^E	1273	0	0.39	1.28	1.83	1.57	0.67
	{Ag}	$\Delta \bar{S}^{E_{Ag}}$	1273	3.31	4.29	4.20	2.22	0.64	0.13
{Pb–Au}	{Pb} {Au}	ΔS^E	1200	0	1.09	1.66	1.78	1.49	0.64
	{Au}	$\Delta \bar{S}^E_{Au}$	1200	9.81	7.40	2.36	1.78	0.64	0.07
{Pb–Bi}	{Pb} {Bi}	ΔS^E	700	0	0.08	0.21	0.21	0.17	0.13
	{Bi}	$\Delta \bar{S}^E_{Bi}$	700	1.09	0.85	0.42	0.17	0.13	0.04
{Pb–Cd}	{Pb} {Cd}	ΔS^E	773	0	0.19	0.52	0.71	0.73	0.46
	{Cd}	$\Delta \bar{S}^E_{Cd}$	773	1.95	1.88	1.44	0.98	0.60	0.18
{Pb–Cu}	{Pb} {Cu}	ΔS^E	1473	0	0.46	0.94	1.05	0.98	0.72
	{Cu}	$\Delta \bar{S}_{ECu}$	1473	5.58	3.84	1.93	0.93	0.90	0.30
{Pb–Hg}	{Pb} {Hg}	ΔS^E	600	0	−0.42	−0.96	−1.16	−0.98	−0.46
	{Hg}	$\Delta \bar{S}^E_{Hg}$	600	−4.94	−3.66	−2.27	−1.19	−0.41	−0.10
{Pb–In}	{Pb} {In}	ΔS^E	673	0	0.25	0.50	0.51	0.35	0.13
	{In}	$\Delta \bar{S}^E_{In}$	673	3.46	2.05	0.92	0.32	0.04	0
{Pb–K}	{Pb} {K}	ΔS^E	848	0	−1.87	−5.49	−8.88	−9.79	−3.41
	{K}	$\Delta \bar{S}^E_K$	848	−18.83	−18.47	−17.33	−20.92	−3.82	0.28
{Pb–Mg}	{Pb} {Mg}	ΔS^E	973	0	−0.20	−0.23	−0.58	−0.62	0.57
	{Mg}	$\Delta \bar{S}^E_{Mg}$	973	−3.87	−0.90	−0.62	−1.42	0.68	0.70
{Pb–Na}	{Pb} {Na}	ΔS^E	700	0	−0.83	−3.15	−5.90	−7.42	−2.94
	{Na}	$\Delta \bar{S}^E_{Na}$	700	−7.17	−9.33	−12.76	−12.20	−7.61	0.51
{Pb–Sb}	{Pb} {Sb}	ΔS^E	905	0	0.19	0.40	0.44	0.38	0.18
	{Sb}	$\Delta \bar{S}^E_{Sb}$	905	2.23	1.60	0.81	0.41	0.20	0.03
{Pb–Sn}	{Pb} {Sn}	ΔS^E	1050	0	−0.77	−1.27	−1.02	−0.56	−0.15
	{Sn}	$\Delta \bar{S}^E_{Sn}$	1050	−9.98	−5.86	−1.31	0.04	0.15	0.03
⟨Pb–Tl⟩	⟨Pb⟩ ⟨Tl⟩β	ΔS^E	523	0	−0.58	−1.25	−1.50	−1.38	—
	⟨Tl⟩β	$\Delta \bar{S}^E_{Tl}$	523	−6.96	−4.84	−2.74	−1.42	−0.95	—
{Pb–Tl}	{Pb} {Tl}	ΔS^E	773	0	−0.23	−0.50	−0.54	−0.42	−0.26
	{Tl}	$\Delta \bar{S}^E_{Tl}$	773	−2.54	−2.05	−0.99	−0.41	−0.16	−0.15
{Pb–Zn}	{Pb} {Zn}	ΔS^E	—	0	0.77	1.99	2.76	2.87	1.69
	{Zn}	$\Delta \bar{S}^E_{Zn}$	—	9.20	7.30	5.52	3.93	2.05	0.29

Pt. Platinum alloys: partial and integral heats or excess Gibbs energies of solution in J/g–atom

System	Components	Thermo-Chemical Function	Temp. (K)	$N_2 =$ 0.0	0.1	0.3	0.5	0.7	0.9
⟨Pt–Au⟩	⟨Pt⟩⟨Au⟩	ΔH	—	0	1861.9	3326.3	2644.3	1108.8	0
	⟨Au⟩	$\Delta \bar{H}_{Au}$	—	23,807.0	14,999.6	3891.1	−669.4	−1192.4	−251.0
⟨Pt–Co⟩	⟨Pt⟩⟨Co⟩	ΔG^E	1273	0	−4464.3	−10,418.2	−12,405.6	−10,418.2	−4464.3
	⟨Co⟩	$\Delta \bar{G}^E_{Co}$	1273	−49,622.2	−40,195.7	−24,313.2	−12,405.6	−4464.3	−497.9
⟨Pt–Cr⟩	⟨Pt⟩⟨Cr⟩	ΔG^E	1773	0	−13,137.8	−30,375.8	—	—	—
	⟨Cr⟩	$\Delta \bar{G}^E_{Cr}$	1773	−146,858.4	−117,570.4	−69,663.6	—	—	—
⟨Pt–Cu⟩	⟨Pt⟩⟨Cu⟩	ΔH	1350	0	−2887.0	−8284.3	−11,087.6	−10,384.7	−5138.0
	⟨Cu⟩	$\Delta \bar{H}_{Cu}$	1350	−28,744.1	−28,635.3	−25,288.1	−13,095.9	−6443.4	−979.1
⟨Pt–Fe⟩	⟨Pt⟩⟨Fe⟩	ΔG^E	1123	0	−6652.6	$-13{,}706.8\gamma_3$	$-18{,}175.3\gamma_2$	−13,982.9	−5723.7
	⟨Fe⟩γ	$\Delta \bar{G}^E_{Fe}$	1123	−66,584.2	−66,584.2	$-37{,}338.0\gamma_3$	$-17{,}430.5\gamma_2$	−3886.9	−1882.8
⟨Pt–Ni⟩	⟨Pt⟩⟨Ni⟩	ΔG^E	1625	0	−2640.1	−6694.4	−8619.0	−7782.2	−3564.8
	⟨Pt⟩⟨Ni⟩	ΔH	298	0	−3188.2	−7238.3	−9263.4	−7811.5	−2723.8
	⟨Ni⟩	$\Delta \bar{G}^E_{Ni}$	1625	−28,032.8	−24,794.4	−17,531.0	−10,229.9	−4142.2	−510.4
⟨Pt–Pd⟩	⟨Pt⟩⟨Pd⟩	ΔH	—	0	−1221.7	−3234.2	−4317.9	−4016.6	−1887.0
	⟨Pd⟩	$\Delta \bar{H}_{Pd}$	—	−12,635.7	−11,736.1	−8911.9	−5481.0	−2301.2	−292.9

Pt. Platinum alloys: partial and integral excess entropies of solution in J/deg g–atom

System	Components	Thermo-Chemical Function	Temp. (K)	$N_2 =$ 0.0	0.1	0.3	0.5	0.7	0.9
⟨Pt–Au⟩	⟨Pt⟩⟨Au⟩	ΔS^E	—	0	−0.44	−1.46	−2.30	−2.43	−1.21
	⟨Au⟩	$\Delta \bar{S}^E_{Au}$	—	−3.77	−4.81	−5.04	−3.66	−1.72	−0.24
⟨Pt–Cu⟩	⟨Pt⟩⟨Cu⟩	ΔS^E	1350	0	0.16	−0.52	−0.87	−0.75	−0.40
	⟨Cu⟩	$\Delta \bar{S}^E_{Cu}$	1350	3.87	−0.18	−4.33	−0.37	−0.44	−0.11
⟨Pt–Ni⟩	⟨Pt⟩⟨Ni⟩	ΔS^E	1625	0	−0.34	−0.33	−0.40	−0.02	0.52
⟨Pt–Pd⟩	⟨Pt⟩⟨Pd⟩	ΔS^E	—	0	−0.69	−1.81	−2.49	−2.23	−1.05
		$\Delta \bar{S}^E_{Pd}$	—	−7.11	−6.57	−4.98	−3.03	−1.28	—