TABLES OF COLLISION INTEGRALS FOR THE (m, 6) POTENTIAL FOR TEN VALUES OF m

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FOREWORD

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This technical report has been reviewed and is approved.

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ABSTRACT

Tables of collision integrals are presented for the (m,6) potential function for 87 reduced temperatures for each of 10 values of m. The exponents m used were m = 9, 12, 15, 18, 21, 24, 30, 50, and 75. Comparisons are made with five other calculations for the case m = 12. The accuracy of the calculation appears to be at least several parts in 10,000.

CONTENTS

SECTION I
INTRODUCTION

The kinetic theory of gases relates the macroscopic coefficients in the phenomenological flow equations, the so-called transport coefficients, to the microscopic intermolecular potential function between two of the constituent molecules. The connection is expressed, in the Chapman-Enskog solution of the Boltzmann equation [1,2], in terms of certain three-fold integrals, generally referred to as collision integrals and designated $\Omega^{(\ell,s)*}(T^*)$. Given the intermolecular potential function appropriate to a particular system, one can calculate these integrals, and hence the macroscopic transport coefficients of the corresponding gas in the ideal gas state. Unfortunately, the potential functions are generally not well known so that the procedure must, in practice, be inverted, the theoretical relations connecting macroscopic experimental data with microscopic theory being used to learn something about the potential function. The way in which this is done has been amply described in the literature [2]. This procedure has recently been examined by one of us [3] in order to determine the sensitivity of the various properties to the potential function. The transport coefficients were found to be a possibly good source for learning something about the potential function. This requires tables of collision integrals for different classes of potential functions. Such tables exist for the square-well [4], exp-6 [5,6,7], Morse [8], Kihara [9], inverse power [10], and one term exponential [11] families of functions. There are also tables for functions with a single term added to the (12,6) function. There are the (12,6,3,) [12], (12,6,4) [13] and (12,6,5) [14] functions. In addition, calculations exist for certain single functions, e.g. (9,6), (28,7), (16,6) and (18,6) potentials [15] and, of course, the (12,6) function [2,12,16]. This work adds to these tables for the (m,6) family for 10 values of m.

One hopes that the potential functions which turn out to be adequate for a description of macroscopic properties will be temperature independent and simple in form. Quantum mechanical perturbation theory indicates that the attraction for large separation should be described by a series of inverse powers of the internuclear distance starting with the inverse sixth power for neutral molecules. No theoretical justification exists for the repulsive part. Perhaps the simplest form which can be taken for this part is a single inverse power of the internuclear separation. It might be interesting to let the exponent of this repulsive term be a variable and to determine it, for any given system, from fits to experimental data. We have chosen to prepare the way for such an approach by calculating tables of collision integrals for such a potential.

The (m,6) potential has the form

$$\phi^*(r^*) = \frac{\phi(r/\sigma)}{\varepsilon} = \frac{1}{\left(\frac{6}{m}\right)^{\frac{6}{m-6}} - \left(\frac{6}{m}\right)^{\frac{m}{m-6}}}\left[\left(\frac{1}{r^*}\right)^m - \left(\frac{1}{r^*}\right)^6\right]$$

This function should prove useful on several counts. First of all, it is simple in form. Secondly, the repulsive index, m, serves as a simple indicator of the hardness of the repulsive core. Furthermore, the potential has been used in a number of more complicated theories [17,18]. In some instances [17], this form has proved useful because the theory involves derivatives of the potential which then leads to simple recursion formulae on the index m. Finally, the potential functions derived from two body scattering data have often been represented by simple inverse powers of the internuclear distance.

SECTION II
GENERAL FORMULAE

The collision integrals $\Omega^{(l,s)*}(T^*)$ are related to the potential functions through the relations

$$\Omega^{(l,s)*}(T^*) = \frac{2}{(s+1)!\,T^{*(s+2)}} \int_0^\infty \exp\left[-\frac{g^{*2}}{T^*}\right] g^{*(2s+3)} Q^{(l)*}(g^*)\, dg^*$$

where $Q^{(l)*}(g^*)$ is a cross section given by

$$Q^{(l)*}(g^*) = \frac{2}{1-\frac{1}{2}\frac{1+(-1)^l}{1+l}} \int_0^\infty (1-\cos^l\chi)\, b^*\, db^*$$

with the intermolecular potential function being contained in the equation for the scattering angle

$$\chi(g^*, b^*) = \pi - 2b^* \int_{r_m}^\infty \frac{dr^*/r^{*2}}{\left[1-(b^*)^2/r^{*2}-\phi^*(r^*)/g^{*2}\right]^{1/2}}$$

Here r_m * is being the distance between a pair of molecules at the time of closest approach while b* is the impact parameter.

Certain ratios of the collision integrals appear in the transport theory of multicomponent mixtures [2]. These ratios being slowly varying functions of T* are also useful in interpolation. The relevant ratios are:

$$A^* = \frac{\Omega^{(2,2)*}}{\Omega^{(1,1)*}}$$

$$B^* = \frac{5\Omega^{(1,2)*} - 4\Omega^{(1,3)*}}{\Omega^{(1,1)*}}$$

$$C^* = \frac{\Omega^{(1,2)*}}{\Omega^{(1,1)*}}$$

$$E^* = \frac{\Omega^{(2,3)*}}{\Omega^{(2,2)*}}$$

$$F^* = \frac{\Omega^{(3,3)*}}{\Omega^{(1,1)*}}$$

The thermal diffusion ratio, α_T, has long been considered a sensitive means for the determination of the intermolecular potential function. Of particular interest is the isotopic approximation to this quantity. In that approximation, the mixture consists of two isotopes of sufficiently large mass so that the difference in molecular weight between the isotopes can be neglected with respect to the molecular weights themselves. In addition, the differences between the intermolecular potential functions may also be neglected. The thermal diffusion ratio in this so-called isotopic approximation is called the isotopic thermal diffusion ratio.

We have calculated the isotopic thermal diffusion ratio for the first order solutions to the Boltzmann equation (at zero density) for both the Chapman-Cowling and Kihara methods [19,20], as well as for the second order Kihara solution. The question of the convergence of the thermal diffusion ratio as higher order terms are taken has been examined by Mason [19] and others [20]. Our calculations are based on the following expressions:

The first order Chapman-Cowling approximation:

$$[\alpha_0]_{c.c.,1} = \frac{15(6C^*-5)(2A^*+5)}{2A^*(16A^*-12B^*+55)}$$

The first order Kihara expression:

$$[\alpha_0]_{K_1} = \frac{15(6C^*-5)}{16A^*}$$

The second order Kihara expression

$$[\alpha_0]_{K_2} = [\alpha_0]_{c.c.} (1+\delta)$$

where

$$\delta = \frac{I^*}{9}\left[\frac{2A^*}{\frac{35}{4}+7A^*+4F^*}\left\{H^*+\frac{1}{2}\left(\frac{7(5-6C^*)+A^*I^*}{5+2A^*}\right)\left(\frac{\frac{35}{8}+28A^*-6F^*}{21A^*}\right)\right\}\right.$$

$$\left. -\frac{5}{7}\left\{H^*-\frac{7}{5}\frac{5-6C^*}{5+2A^*}-\frac{3I^*}{10}\right\}\right]$$

where $I^* = 7-8E^*$

and $H^* = \dfrac{\frac{35}{4}-3B^*-6C^*}{5-6C^*}$

The factors f_η, f_λ, and f_D used to obtain Kihara's second approximation to the coefficients of viscosity, diffusion and thermal conductivity are also presented. These are computed from the relations:

$$f_\eta = 1+\frac{3}{196}(8E^*-7)^2$$

$$f_\lambda = 1+\frac{1}{42}(8E^*-7)^2$$

$$f_D = 1+(6C^*-5)^2/(16A^*+40)$$

SECTION III
NUMERICAL RESULTS

The numerical methods employed have been described elsewhere [21]. These calculations differ from the earlier ones in that higher order Gussian quadrature formulae have been used here.

Tables of collision integrals for the (12,6) potential have been calculated by a number of other workers. For this reason, collision integrals for that function can be used to "calibrate" a new calculation. Our "calibration" is presented as Table 1 in which are given differences, in parts per thousand, between our results for the (12,6) function and those of other workers. Table 1 gives one an indication of the accuracy of our results. In particular, our results would appear to be good to at least one part per thousand over almost the entire range with strong indications that an accuracy of one part in ten thousand is likely for most values. As has been pointed out previously [8], the differences between our results and those of Monchick and Mason at high temperatures most likely result from errors in their calculations. The Hirshfelder, Curtiss, and Bird results [2] depart drastically from all calculations at the high and low temperature ends of the tables.

We have also included a table of Boyle temperatures and Boyle volumes for these potentials. These quantities have proven useful in the correlation of gas properties. Also presented are the ratios of the Boyle temperatures and volumes for each function to those for the (12,6) function. Such ratios can be used to obtain good first guesses at the parameters ε/k and b_o appropriate to a given substance for any of these values of m, given the ε/k and b_o values for the (12,6) function for that substance. One need only to divide the ε/k and b_o values for the (12,6) function by the ratios for the other function.

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TABLE 1: Comparisons between these results and other calculations

	$\Omega^{(2,2)*}$						$\Omega^{(1,1)*}$				
T^*	I.	II.	III.	IV.	V.	VI.	I.	II.	III.	V.	VI.
0.1	0.83				0.88		1.19			-0.21	
0.2	1.83				0.57		.90			0.26	
0.25		1.11						1.99			
0.3	2.00	1.51			0.70	21.75	.55	1.35		0.25	-4.18
0.35		0.12				18.92		2.47			-2.63
0.4	0.67	0.32			-0.28	16.33	1.17	2.32		0.99	-0.39
0.45		-0.51				13.63		2.18			-0.77
0.5	1.33	1.07			0.67	13.18	.06	0.55		-0.03	0.11
0.55		-0.67				9.94		1.82			1.05
0.6	-0.50	-0.69	-1.07		-0.98	8.60	.64	0.96	-2.18	0.53	0.48
0.65		0.25				8.78		-0.04			-0.04
0.7	0.53	0.43	0.01		0.22	7.87	.27	0.56	-1.86	0.16	0.45
0.75						6.03					1.75
0.8	-0.97	-1.08	-1.42		-1.19	4.75	1.08	1.33	-0.65	1.15	1.21
0.85						4.44					0.83
0.9	-0.12	-0.18	-0.53		-0.29	4.24	-0.01	0.18	-1.00	-0.01	0.32
0.95						4.32					0.20
1.0	0.27	0.21	0.21	-0.29	0.15	3.99	-0.28	-0.14	-1.11	-0.28	0.28
1.1			-0.31		-0.50	2.33			0.48	1.21	1.21
1.2	-0.59	-0.66	-0.53	-1.76	-0.66	1.54	1.08	0.55	0.63	1.01	1.38
1.3			-0.70		-0.35	1.44			-0.49	0.46	1.08
1.4	-0.06	-0.13	0.01	-0.50	-0.13	1.49	-0.12	-0.20	-0.44	-0.20	0.37
1.5			0.09		0.01	0.85			-0.62	-0.29	0.21
1.6	0.11	0.03		0.11	-0.04	0.89	-0.08	-0.08		-0.08	0.69
1.7					-0.16	0.89				0.41	1.20
1.8	-0.29	-0.37		-0.05	-0.37	0.45	0.76	0.76		0.68	1.30
1.9			-0.76		-0.42	0.08			-0.32	0.68	1.51
2.0	-0.35	-0.44		0.16	-0.44	0.24	0.63	0.54		0.63	0.91
2.2		-0.28		0.16	-0.28	-0.10		0.26		0.26	0.74
2.4		-0.21		0.25	-0.12	-0.12		-0.10		-0.20	1.09
2.6		-0.11		0.35	-0.11	-0.30		-0.21		-0.31	1.01
2.8		-0.16		0.21	-0.16	0.12		-0.34		-0.34	0.69
3.0	-0.18	-0.18		0.10	-0.28	-0.38	-0.11	-0.07		-0.07	0.98
3.2			0.10			-0.48					1.48
3.4			-1.92			-0.63					1.50
3.6			0.07			-0.34					1.44
3.8			0.02			-0.38					1.35
4.0	-0.18	-0.20		0.11	-0.20	-0.31	0.22	0.14		0.02	1.27
4.5		-0.22			-0.22	-0.33		0.00		0.00	0.81
5.0	-0.12	-0.16		0.16	-0.16	-0.27	-0.07	-0.11		-0.11	0.60

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TABLE 1: Comparisons between these results and other calculations (Cont'd)

	$\Omega^{(2,2)*}$						$\Omega^{(1,1)*}$				
T^*	I.	II.	III.	IV.	V.	VI.	I.	II.	III.	V.	VI.
5.5		-0.18	-1.60					-0.10	-0.94		
6.0	-0.09	-0.14		0.85	-0.14	-0.25	-0.18	-0.21		-0.21	0.40
7.0	-0.10	-0.19		0.15	-0.08	-0.08	-0.10	-0.15		-0.15	0.10
8.0	-0.12	-0.13		0.11	-0.13	-0.13	0.02	-0.09		-0.09	-0.09
9.0	-0.13	-0.19		0.05	-0.19	-0.07	0.09	0.00		0.00	0.00
10.0	-0.15	-0.21		0.03	-0.21	0.03	0.06	0.06		0.06	-0.21
11.0		-0.27		-0.02				-0.06			
12.0	-0.21	-0.29		-0.04	-0.29		-0.03	0.00		0.00	
13.0				-0.12							
14.0	-0.28			-0.24	-0.24		-0.08			-0.03	
15.0				-0.21							
16.0	-0.33	-0.41		-0.28	-0.41		-0.10	-0.16		-0.16	
18.0	-0.37				-0.40		-0.11			-0.11	
20.0	-0.42	-0.36			-0.36	0.17	-0.14	-0.21		-0.21	-0.06
24.0		-0.45						-0.08			
30.0	-0.64				-0.39	0.03	-0.19			-0.19	0.29
32.0		-0.40		0.03				-0.20			
40.0	-1.22	-0.30			-0.30	-0.45	-0.34	-0.17		-0.17	0.33
45.0					-0.32					-0.17	
50.0	-2.07	-0.24			-0.39	-1.16	-0.62	-0.17		-0.17	0.52
60.0						-2.08					0.33
70.0						-2.75					0.14
75.0	-4.37				-1.00		-1.57			-0.35	
80.0		-0.10				-3.72		-0.05			-0.05
90.0						-4.53					-0.43
100.0	-6.10	0.01			-2.21	-5.26	-2.49	-0.12		-0.70	-0.50
200.0		-0.08				-12.11		-0.10			-3.11

TABLE 2: BOYLE PARAMETERS FOR THE (m, 6) POTENTIALS

m	T_B^*	$\frac{T_B^*}{(T_B^*)_{12,6}}$	V_B^*	$\frac{V_B^*}{(V_B^*)_{12,6}}$
9	4.5554	1.3328	0.7153	0.8817
12	3.4179	1.0000	0.8112	1.0000
15	2.8766	0.8416	0.8730	1.0761
18	2.5581	0.7484	0.9164	1.1296
21	2.3471	0.6867	0.9487	1.1296
24	2.1964	0.6426	0.9737	1.2002
30	1.9943	0.5835	1.0099	1.2449
40	1.7997	0.5266	1.0478	1.2916
50	1.6848	0.4929	1.0714	1.3208
75	1.5314	0.4481	1.1042	1.3612

TABLE 3a. Collision integrals for the (9,6) potential function

T^*	$\Omega^{(1,1)*}$	$\Omega^{(2,2)*}$	$\Omega^{(1,2)*}$	$\Omega^{(1,3)*}$	$\Omega^{(2,3)*}$	$\Omega^{(3,3)*}$
.100	4.7348	4.7232	4.1639	3.7719	4.3120	4.3589
.150	4.0703	4.1080	3.5435	3.1645	3.7606	3.7046
.200	3.6211	3.7308	3.1036	2.7174	3.4102	3.2510
.250	3.2752	3.4463	2.7585	2.3729	3.1232	2.9086
.300	2.9910	3.2046	2.4791	2.1062	2.8694	2.6410
.350	2.7606	2.9914	2.2577	1.9026	2.6468	2.4237
.400	2.5571	2.8090	2.0709	1.7402	2.4555	2.2436
.450	2.3935	2.6414	1.9232	1.6141	2.2883	2.0938
.500	2.2457	2.4901	1.7969	1.5114	2.1428	1.9676
.550	2.1174	2.3627	1.6906	1.4273	2.0202	1.8585
.600	2.0124	2.2456	1.6039	1.3589	1.9130	1.7648
.650	1.9177	2.1386	1.5287	1.3012	1.8193	1.6850
.700	1.8321	2.0449	1.4634	1.2521	1.7381	1.6142
.750	1.7558	1.9625	1.4064	1.2100	1.6675	1.5518
.800	1.6887	1.8895	1.3569	1.1735	1.6057	1.4969
.850	1.6310	1.8229	1.3141	1.1418	1.5510	1.4484
.900	1.5798	1.7612	1.2765	1.1141	1.5018	1.4050
.950	1.5324	1.7054	1.2426	1.0893	1.4580	1.3662
1.000	1.4886	1.6554	1.2120	1.0672	1.4189	1.3312
1.100	1.4118	1.5694	1.1594	1.0292	1.3522	1.2707
1.200	1.3475	1.4971	1.1160	.9979	1.2971	1.2202
1.300	1.2936	1.4360	1.0796	.9715	1.2512	1.1779
1.400	1.2489	1.3833	1.0490	.9490	1.2123	1.1418
1.500	1.2096	1.3375	1.0225	.9294	1.1789	1.1108
1.600	1.1747	1.2977	.9993	.9121	1.1499	1.0837
1.700	1.1437	1.2629	.9788	.8968	1.1246	1.0599
1.800	1.1160	1.2323	.9606	.8831	1.1023	1.0387
1.900	1.0912	1.2051	.9442	.8707	1.0825	1.0199
2.000	1.0689	1.1807	.9295	.8594	1.0647	1.0029
2.200	1.0304	1.1389	.9038	.8396	1.0341	.9737
2.400	.9987	1.1040	.8822	.8225	1.0086	.9493
2.600	.9722	1.0747	.8638	.8077	.9869	.9284
2.800	.9492	1.0495	.8477	.7945	.9682	.9104
3.000	.9289	1.0278	.8334	.7828	.9517	.8945
3.200	.9109	1.0088	.8206	.7721	.9371	.8804
3.400	.8948	.9919	.8090	.7624	.9241	.8678
3.600	.8804	.9768	.7985	.7534	.9122	.8563
3.800	.8674	.9631	.7889	.7452	.9014	.8459
4.000	.8555	.9508	.7801	.7375	.8915	.8363
4.500	.8298	.9241	.7606	.7204	.8699	.8154
5.000	.8086	.9020	.7441	.7057	.8516	.7977
5.500	.7907	.8834	.7297	.6928	.8359	.7826
6.000	.7752	.8673	.7171	.6813	.8221	.7693
6.500	.7616	.8531	.7058	.6710	.8099	.7576
7.000	.7495	.8406	.6956	.6617	.7990	.7471

TABLE 3a. Collision integrals for the (9,6) potential function (Cont'd)

T^*	$\Omega^{(1,1)*}$	$\Omega^{(2,2)*}$	$\Omega^{(1,2)*}$	$\Omega^{(1,3)*}$	$\Omega^{(2,3)*}$	$\Omega^{(3,3)*}$
7.500	.7385	.8293	.6864	.6531	.7891	.7375
8.000	.7286	.8190	.6778	.6452	.7799	.7288
8.500	.7195	.8097	.6700	.6379	.7716	.7208
9.000	.7111	.8011	.6627	.6312	.7638	.7134
9.500	.7033	.7931	.6560	.6248	.7566	.7065
10.000	.6961	.7857	.6496	.6189	.7498	.7000
11.000	.6830	.7722	.6380	.6079	.7375	.6882
12.000	.6714	.7603	.6277	.5982	.7264	.6777
13.000	.6610	.7496	.6183	.5893	.7164	.6682
14.000	.6516	.7398	.6097	.5812	.7072	.6595
15.000	.6430	.7309	.6019	.5737	.6988	.6515
16.000	.6351	.7227	.5947	.5668	.6910	.6441
17.000	.6278	.7150	.5879	.5603	.6837	.6372
18.000	.6210	.7079	.5817	.5543	.6769	.6307
19.000	.6147	.7012	.5758	.5487	.6705	.6246
20.000	.6087	.6950	.5703	.5434	.6645	.6189
22.000	.5978	.6834	.5601	.5336	.6533	.6084
24.000	.5881	.6730	.5509	.5248	.6433	.5989
26.000	.5792	.6636	.5426	.5169	.6342	.5903
28.000	.5711	.6549	.5351	.5096	.6258	.5824
30.000	.5637	.6469	.5281	.5028	.6180	.5751
32.000	.5568	.6395	.5216	.4966	.6108	.5683
34.000	.5505	.6325	.5156	.4908	.6041	.5620
36.000	.5445	.6261	.5099	.4854	.5978	.5561
38.000	.5390	.6200	.5046	.4803	.5919	.5505
40.000	.5337	.6142	.4997	.4755	.5864	.5453
45.000	.5218	.6012	.4884	.4647	.5737	.5334
50.000	.5113	.5897	.4785	.4552	.5626	.5229
55.000	.5020	.5794	.4697	.4467	.5526	.5136
60.000	.4936	.5701	.4617	.4391	.5436	.5052
65.000	.4860	.5617	.4545	.4321	.5354	.4975
70.000	.4791	.5539	.4479	.4258	.5279	.4905
75.000	.4727	.5468	.4419	.4200	.5210	.4840
80.000	.4667	.5402	.4362	.4146	.5146	.4780
85.000	.4612	.5340	.4310	.4096	.5087	.4724
90.000	.4561	.5282	.4262	.4049	.5031	.4672
95.000	.4512	.5228	.4216	.4005	.4979	.4623
100.000	.4467	.5177	.4173	.3964	.4930	.4577
125.000	.4273	.4960	.3990	.3789	.4720	.4381
150.000	.4121	.4787	.3846	.3651	.4553	.4226
175.000	.3995	.4645	.3727	.3537	.4416	.4098
200.000	.3889	.4524	.3627	.3441	.4300	.3989

TABLL 3b. Ratios of collision integrals for the (9,6) potential function

T^*	A^*	B^*	C^*	E^*	F^*
0.100	0.9976	1.2106	0.8794	0.9129	0.9206
0.150	1.0093	1.2430	0.8706	0.9154	0.9101
0.200	1.0303	1.2836	0.8571	0.9141	0.8978
0.250	1.0523	1.3132	0.8422	0.9062	0.8881
0.300	1.0714	1.3276	0.8289	0.8954	0.8830
0.350	1.0836	1.3324	0.8178	0.8848	0.8780
0.400	1.0985	1.3272	0.8098	0.8741	0.8774
0.450	1.1036	1.3200	0.8035	0.8663	0.8748
0.500	1.1088	1.3086	0.8001	0.8605	0.8762
0.550	1.1158	1.2958	0.7984	0.8550	0.8777
0.600	1.1159	1.2838	0.7970	0.8519	0.8770
0.650	1.1152	1.2718	0.7972	0.8507	0.8787
0.700	1.1161	1.2600	0.7987	0.8499	0.8810
0.750	1.1177	1.2486	0.8010	0.8497	0.8838
0.800	1.1189	1.2380	0.8035	0.8498	0.8864
0.850	1.1176	1.2281	0.8057	0.8508	0.8881
0.900	1.1148	1.2191	0.8080	0.8527	0.8893
0.950	1.1129	1.2109	0.8109	0.8549	0.8915
1.000	1.1120	1.2033	0.8142	0.8571	0.8943
1.100	1.1117	1.1899	0.8212	0.8616	0.9001
1.200	1.1110	1.1787	0.8282	0.8665	0.9055
1.300	1.1100	1.1690	0.8346	0.8713	0.9105
1.400	1.1076	1.1605	0.8400	0.8764	0.9143
1.500	1.1057	1.1533	0.8453	0.8814	0.9183
1.600	1.1047	1.1474	0.8507	0.8861	0.9225
1.700	1.1043	1.1425	0.8558	0.8905	0.9267
1.800	1.1042	1.1384	0.8607	0.8945	0.9308
1.900	1.1044	1.1348	0.8653	0.8982	0.9346
2.000	1.1047	1.1317	0.8696	0.9017	0.9383
2.200	1.1052	1.1266	0.8771	0.9080	0.9450
2.400	1.1055	1.1226	0.8834	0.9135	0.9505
2.600	1.1054	1.1193	0.8885	0.9183	0.9550
2.800	1.1057	1.1168	0.8930	0.9225	0.9591
3.000	1.1065	1.1150	0.8971	0.9260	0.9630
3.200	1.1074	1.1137	0.9008	0.9290	0.9665
3.400	1.1085	1.1127	0.9041	0.9316	0.9698
3.600	1.1095	1.1120	0.9070	0.9339	0.9727
3.800	1.1104	1.1114	0.9096	0.9359	0.9753
4.000	1.1114	1.1110	0.9119	0.9377	0.9776
4.500	1.1135	1.1103	0.9166	0.9413	0.9826
5.000	1.1155	1.1099	0.9201	0.9441	0.9865
5.500	1.1173	1.1097	0.9229	0.9462	0.9898
6.000	1.1189	1.1095	0.9251	0.9479	0.9925
6.500	1.1203	1.1094	0.9267	0.9494	0.9948
7.000	1.1216	1.1093	0.9282	0.9505	0.9968

TABLE 3b. Ratios of collision integrals for the (9,6) potential function (Continued)

T^*	A^*	B^*	C^*	E^*	F^*
7.500	1.1229	1.1094	0.9293	0.9515	0.9987
8.000	1.1242	1.1094	0.9304	0.9523	1.0003
8.500	1.1254	1.1095	0.9313	0.9529	1.0018
9.000	1.1266	1.1096	0.9320	0.9535	1.0033
9.500	1.1277	1.1098	0.9327	0.9540	1.0045
10.000	1.1287	1.1099	0.9332	0.9544	1.0057
11.000	1.1306	1.1102	0.9341	0.9550	1.0077
12.000	1.1324	1.1106	0.9348	0.9554	1.0094
13.000	1.1340	1.1110	0.9354	0.9557	1.0108
14.000	1.1354	1.1113	0.9358	0.9560	1.0121
15.000	1.1367	1.1117	0.9361	0.9561	1.0131
16.000	1.1379	1.1121	0.9363	0.9561	1.0141
17.000	1.1389	1.1124	0.9365	0.9562	1.0149
18.000	1.1399	1.1127	0.9366	0.9562	1.0156
19.000	1.1408	1.1130	0.9367	0.9562	1.0162
20.000	1.1417	1.1133	0.9368	0.9561	1.0168
22.000	1.1432	1.1139	0.9369	0.9560	1.0177
24.000	1.1445	1.1144	0.9369	0.9559	1.0185
26.000	1.1456	1.1149	0.9369	0.9557	1.0192
28.000	1.1466	1.1153	0.9368	0.9555	1.0197
30.000	1.1475	1.1157	0.9367	0.9554	1.0202
32.000	1.1484	1.1160	0.9367	0.9552	1.0206
34.000	1.1491	1.1164	0.9366	0.9550	1.0209
36.000	1.1498	1.1167	0.9365	0.9549	1.0212
38.000	1.1504	1.1169	0.9364	0.9547	1.0215
40.000	1.1510	1.1172	0.9363	0.9546	1.0218
45.000	1.1522	1.1178	0.9360	0.9543	1.0223
50.000	1.1533	1.1183	0.9358	0.9540	1.0227
55.000	1.1542	1.1187	0.9356	0.9537	1.0231
60.000	1.1550	1.1191	0.9354	0.9535	1.0234
65.000	1.1557	1.1194	0.9352	0.9533	1.0236
70.000	1.1563	1.1197	0.9350	0.9531	1.0238
75.000	1.1569	1.1200	0.9349	0.9529	1.0240
80.000	1.1574	1.1202	0.9347	0.9527	1.0242
85.000	1.1579	1.1205	0.9346	0.9526	1.0243
90.000	1.1583	1.1207	0.9344	0.9524	1.0244
95.000	1.1587	1.1209	0.9343	0.9523	1.0246
100.000	1.1591	1.1211	0.9342	0.9521	1.0247
125.000	1.1606	1.1219	0.9337	0.9516	1.0251
150.000	1.1617	1.1224	0.9332	0.9512	1.0254
175.000	1.1626	1.1229	0.9329	0.9509	1.0257
200.000	1.1633	1.1233	0.9326	0.9506	1.0258

TABLE 3c. Tables of additional functions of the collision integrals for the (9,6) potential function

	Higher order corrections			Isotopic thermal diffusion ratios		
T^*	f_η	f_λ	$f_{\mathcal{D}\theta}$	c.c.$_1$	Kihara$_1$	Kihara$_2$
.100	1.0014	1.0022	1.0014	.258	.260	.263
.150	1.0016	1.0025	1.0009	.207	.208	.214
.200	1.0015	1.0023	1.0004	.131	.130	.138
.250	1.0010	1.0015	1.0001	.048	.048	.054
.300	1.0004	1.0006	1.0000	-.024	-.023	-.021
.350	1.0001	1.0001	1.0002	-.082	-.080	-.081
.400	1.0000	1.0000	1.0003	-.122	-.120	-.122
.450	1.0001	1.0001	1.0006	-.154	-.152	-.155
.500	1.0002	1.0003	1.0007	-.170	-.168	-.170
.550	1.0004	1.0006	1.0008	-.178	-.176	-.177
.600	1.0005	1.0008	1.0008	-.185	-.183	-.183
.650	1.0006	1.0009	1.0008	-.183	-.183	-.181
.700	1.0006	1.0010	1.0007	-.175	-.174	-.172
.750	1.0006	1.0010	1.0006	-.163	-.163	-.160
.800	1.0006	1.0010	1.0006	-.149	-.150	-.146
.850	1.0006	1.0009	1.0005	-.139	-.139	-.135
.900	1.0005	1.0008	1.0004	-.127	-.128	-.124
.950	1.0004	1.0006	1.0003	-.113	-.114	-.110
1.000	1.0003	1.0005	1.0002	-.096	-.097	-.093
1.100	1.0002	1.0003	1.0001	-.061	-.061	-.058
1.200	1.0001	1.0001	1.0000	-.026	-.026	-.024
1.300	1.0000	1.0000	1.0000	.006	.006	.007
1.400	1.0000	1.0000	1.0000	.033	.034	.033
1.500	1.0000	1.0001	1.0001	.060	.061	.059
1.600	1.0001	1.0002	1.0002	.086	.088	.085
1.700	1.0002	1.0004	1.0003	.112	.115	.110
1.800	1.0004	1.0006	1.0005	.136	.140	.135
1.900	1.0005	1.0008	1.0006	.159	.163	.157
2.000	1.0007	1.0011	1.0008	.180	.185	.178
2.200	1.0011	1.0017	1.0012	.217	.223	.216
2.400	1.0015	1.0023	1.0016	.248	.255	.247
2.600	1.0018	1.0029	1.0019	.273	.281	.273
2.800	1.0022	1.0034	1.0022	.295	.304	.296
3.000	1.0025	1.0040	1.0025	.315	.324	.317
3.200	1.0029	1.0044	1.0028	.333	.343	.336
3.400	1.0031	1.0049	1.0031	.349	.359	.353
3.600	1.0034	1.0053	1.0034	.363	.374	.368
3.800	1.0036	1.0057	1.0036	.375	.386	.381
4.000	1.0039	1.0060	1.0038	.386	.398	.393
4.500	1.0043	1.0067	1.0043	.409	.420	.417
5.000	1.0047	1.0073	1.0047	.425	.438	.436
5.500	1.0050	1.0077	1.0050	.438	.451	.450
6.000	1.0052	1.0081	1.0052	.448	.461	.461
6.500	1.0054	1.0084	1.0054	.456	.469	.470
7.000	1.0056	1.0087	1.0056	.462	.476	.477

TABLE 3c. Tables of additional functions of the collision integrals for the (9,6) potential function (Cont'd)

	Higher order corrections			Isotopic thermal diffusion ratios		
T^*	f_η	f_λ	$f_{\mathscr{D}}$	c.c.$_1$	Kihara$_1$	Kihara$_2$
7.500	1.0057	1.0089	1.0057	.467	.481	.483
8.000	1.0058	1.0091	1.0058	.472	.486	.488
8.500	1.0060	1.0093	1.0060	.476	.489	.492
9.000	1.0060	1.0094	1.0060	.479	.493	.496
9.500	1.0061	1.0095	1.0061	.482	.496	.499
10.000	1.0062	1.0096	1.0062	.484	.498	.502
11.000	1.0063	1.0098	1.0063	.487	.502	.506
12.000	1.0063	1.0099	1.0064	.490	.504	.509
13.000	1.0064	1.0099	1.0064	.492	.506	.511
14.000	1.0064	1.0100	1.0065	.493	.507	.513
15.000	1.0064	1.0100	1.0065	.494	.508	.514
16.000	1.0064	1.0100	1.0066	.495	.509	.515
17.000	1.0065	1.0100	1.0066	.495	.509	.516
18.000	1.0065	1.0100	1.0066	.496	.510	.516
19.000	1.0065	1.0100	1.0066	.496	.510	.516
20.000	1.0064	1.0100	1.0066	.496	.510	.516
22.000	1.0064	1.0100	1.0066	.496	.509	.516
24.000	1.0064	1.0100	1.0066	.495	.509	.516
26.000	1.0064	1.0099	1.0066	.495	.508	.515
28.000	1.0064	1.0099	1.0066	.494	.508	.514
30.000	1.0063	1.0098	1.0066	.493	.507	.514
32.000	1.0063	1.0098	1.0066	.493	.506	.513
34.000	1.0063	1.0098	1.0066	.492	.505	.512
36.000	1.0063	1.0097	1.0066	.491	.505	.511
38.000	1.0062	1.0097	1.0065	.490	.504	.511
40.000	1.0062	1.0097	1.0065	.490	.503	.510
45.000	1.0062	1.0096	1.0065	.488	.501	.508
50.000	1.0061	1.0095	1.0065	.487	.500	.507
55.000	1.0061	1.0094	1.0064	.485	.498	.505
60.000	1.0060	1.0094	1.0064	.484	.497	.504
65.000	1.0060	1.0093	1.0064	.483	.496	.502
70.000	1.0060	1.0093	1.0064	.482	.495	.501
75.000	1.0059	1.0092	1.0063	.481	.494	.500
80.000	1.0059	1.0092	1.0063	.480	.493	.499
85.000	1.0059	1.0092	1.0063	.479	.492	.498
90.000	1.0059	1.0091	1.0063	.478	.491	.497
95.000	1.0058	1.0091	1.0063	.477	.490	.496
100.000	1.0058	1.0091	1.0063	.477	.489	.496
125.000	1.0057	1.0089	1.0062	.474	.486	.492
150.000	1.0057	1.0088	1.0061	.471	.484	.490
175.000	1.0056	1.0088	1.0061	.469	.482	.488
200.000	1.0056	1.0087	1.0061	.468	.480	.486

TABLE 4a. Collision integrals for the (12,6) potential function

T^*	$\Omega^{(1,1)*}$	$\Omega^{(2,2)*}$	$\Omega^{(1,2)*}$	$\Omega^{(1,3)*}$	$\Omega^{(2,3)*}$	$\Omega^{(3,3)*}$
.100	4.0127	4.1039	3.5538	3.2422	3.7626	3.7519
.150	3.4833	3.5879	3.0684	2.7772	3.2938	3.2320
.200	3.1328	3.2686	2.7334	2.4413	3.0018	2.8788
.250	2.8677	3.0336	2.4723	2.1779	2.7741	2.6109
.300	2.6509	2.8456	2.2574	1.9669	2.5815	2.3979
.350	2.4695	2.6777	2.0807	1.8000	2.4074	2.2248
.400	2.3171	2.5327	1.9353	1.6668	2.2566	2.0790
.450	2.1823	2.4003	1.8114	1.5583	2.1220	1.9569
.500	2.0662	2.2867	1.7074	1.4701	2.0072	1.8511
.550	1.9681	2.1774	1.6212	1.3981	1.9031	1.7615
.600	1.8779	2.0828	1.5455	1.3373	1.8137	1.6831
.650	1.7979	1.9994	1.4800	1.2857	1.7358	1.6137
.700	1.7298	1.9230	1.4247	1.2424	1.6671	1.5535
.750	1.6699	1.8521	1.3768	1.2052	1.6059	1.5008
.800	1.6139	1.7885	1.3336	1.1724	1.5515	1.4535
.850	1.5633	1.7327	1.2953	1.1439	1.5040	1.4113
.900	1.5175	1.6821	1.2615	1.1187	1.4615	1.3733
.950	1.4763	1.6360	1.2313	1.0963	1.4235	1.3392
1.000	1.4394	1.5935	1.2042	1.0762	1.3890	1.3084
1.100	1.3767	1.5175	1.1583	1.0421	1.3296	1.2553
1.200	1.3218	1.4542	1.1197	1.0137	1.2805	1.2109
1.300	1.2744	1.4010	1.0871	.9898	1.2395	1.1732
1.400	1.2335	1.3550	1.0591	.9692	1.2046	1.1409
1.500	1.1983	1.3151	1.0351	.9515	1.1747	1.1131
1.600	1.1678	1.2801	1.0143	.9359	1.1487	1.0888
1.700	1.1414	1.2491	.9960	.9221	1.1259	1.0675
1.800	1.1175	1.2215	.9796	.9096	1.1058	1.0486
1.900	1.0956	1.1971	.9648	.8984	1.0879	1.0317
2.000	1.0760	1.1753	.9515	.8882	1.0718	1.0165
2.200	1.0418	1.1379	.9284	.8703	1.0443	.9901
2.400	1.0131	1.1069	.9089	.8550	1.0213	.9681
2.600	.9888	1.0807	.8922	.8416	1.0019	.9495
2.800	.9679	1.0581	.8776	.8298	.9851	.9333
3.000	.9499	1.0386	.8647	.8193	.9704	.9191
3.200	.9342	1.0215	.8533	.8098	.9574	.9066
3.400	.9200	1.0064	.8430	.8011	.9458	.8954
3.600	.9071	.9929	.8336	.7931	.9353	.8852
3.800	.8954	.9807	.8250	.7858	.9258	.8760
4.000	.8847	.9697	.8170	.7789	.9171	.8676
4.500	.8617	.9461	.7996	.7638	.8981	.8492
5.000	.8427	.9266	.7849	.7507	.8822	.8337
5.500	.8266	.9102	.7721	.7393	.8685	.8204
6.000	.8127	.8961	.7609	.7291	.8564	.8088
6.500	.8005	.8837	.7508	.7199	.8457	.7984
7.000	.7897	.8726	.7418	.7116	.8361	.7891

TABLE 4a. Collision integrals for the (12,6) potential function (Cont'd)

T^*	$\Omega^{(1,1)*}$	$\Omega^{(2,2)*}$	$\Omega^{(1,2)*}$	$\Omega^{(1,3)*}$	$\Omega^{(2,3)*}$	$\Omega^{(3,3)*}$
7.500	.7800	.8627	.7335	.7039	.8273	.7807
8.000	.7711	.8537	.7260	.6969	.8193	.7729
8.500	.7631	.8454	.7190	.6904	.8118	.7657
9.000	.7556	.8376	.7125	.6843	.8049	.7591
9.500	.7487	.8308	.7064	.6786	.7985	.7529
10.000	.7422	.8244	.7007	.6732	.7925	.7471
11.000	.7306	.8123	.6904	.6634	.7814	.7365
12.000	.7202	.8017	.6811	.6546	.7715	.7269
13.000	.7109	.7921	.6727	.6466	.7625	.7183
14.000	.7025	.7834	.6650	.6392	.7543	.7105
15.000	.6948	.7754	.6579	.6325	.7468	.7032
16.000	.6877	.7681	.6514	.6262	.7398	.6966
17.000	.6811	.7613	.6453	.6204	.7333	.6903
18.000	.6750	.7549	.6397	.6150	.7272	.6845
19.000	.6693	.7489	.6343	.6099	.7215	.6791
20.000	.6640	.7433	.6293	.6051	.7161	.6740
22.000	.6542	.7330	.6202	.5962	.7062	.6645
24.000	.6453	.7238	.6119	.5883	.6973	.6560
26.000	.6374	.7153	.6044	.5810	.6892	.6483
28.000	.6301	.7076	.5975	.5744	.6817	.6412
30.000	.6234	.7005	.5912	.5683	.6748	.6347
32.000	.6172	.6939	.5853	.5626	.6685	.6286
34.000	.6114	.6878	.5798	.5573	.6625	.6229
36.000	.6060	.6820	.5747	.5524	.6569	.6176
38.000	.6010	.6766	.5699	.5478	.6516	.6126
40.000	.5962	.6715	.5654	.5434	.6467	.6079
45.000	.5854	.6599	.5551	.5335	.6354	.5972
50.000	.5759	.6496	.5461	.5247	.6255	.5878
55.000	.5674	.6405	.5380	.5169	.6165	.5793
60.000	.5598	.6322	.5307	.5099	.6085	.5717
65.000	.5528	.6246	.5241	.5035	.6011	.5647
70.000	.5465	.6177	.5180	.4976	.5944	.5584
75.000	.5406	.6113	.5124	.4922	.5882	.5525
80.000	.5352	.6053	.5072	.4872	.5824	.5470
85.000	.5301	.5998	.5024	.4825	.5770	.5419
90.000	.5254	.5946	.4979	.4782	.5719	.5371
95.000	.5209	.5897	.4936	.4741	.5672	.5327
100.000	.5167	.5851	.4896	.4702	.5627	.5284
125.000	.4989	.5654	.4726	.4537	.5436	.5104
150.000	.4847	.5497	.4590	.4406	.5283	.4960
175.000	.4729	.5366	.4478	.4299	.5157	.4841
200.000	.4630	.5256	.4383	.4207	.5050	.4740

TABLE 4b. Ratios of collision integrals for the (12,6) potential function

T^*	A^*	B^*	C^*	E^*	F^*
0.100	1.0227	1.1962	0.8856	0.9168	0.9350
0.150	1.0300	1.2153	0.8809	0.9180	0.9279
0.200	1.0433	1.2455	0.8725	0.9184	0.9189
0.250	1.0579	1.2727	0.8621	0.9144	0.9105
0.300	1.0735	1.2899	0.8516	0.9072	0.9046
0.350	1.0843	1.2976	0.8426	0.8990	0.9009
0.400	1.0930	1.2988	0.8352	0.8910	0.8973
0.450	1.0999	1.2938	0.8300	0.8841	0.8967
0.500	1.1067	1.2858	0.8263	0.8777	0.8959
0.550	1.1064	1.2773	0.8238	0.8740	0.8950
0.600	1.1091	1.2666	0.8230	0.8708	0.8963
0.650	1.1121	1.2555	0.8232	0.8681	0.8975
0.700	1.1117	1.2452	0.8236	0.8669	0.8981
0.750	1.1091	1.2355	0.8245	0.8671	0.8987
0.800	1.1081	1.2257	0.8263	0.8675	0.9006
0.850	1.1083	1.2166	0.8287	0.8680	0.9027
0.900	1.1085	1.2080	0.8314	0.8689	0.9050
0.950	1.1082	1.1999	0.8341	0.8701	0.9071
1.000	1.1069	1.1923	0.8366	0.8718	0.9090
1.100	1.1023	1.1792	0.8414	0.8762	0.9118
1.200	1.1002	1.1680	0.8471	0.8805	0.9161
1.300	1.0994	1.1585	0.8530	0.8848	0.9206
1.400	1.0986	1.1502	0.8587	0.8890	0.9250
1.500	1.0975	1.1432	0.8639	0.8932	0.9289
1.600	1.0962	1.1370	0.8685	0.8973	0.9324
1.700	1.0944	1.1316	0.8726	0.9014	0.9353
1.800	1.0931	1.1269	0.8766	0.9052	0.9384
1.900	1.0926	1.1230	0.8806	0.9088	0.9416
2.000	1.0923	1.1197	0.8843	0.9120	0.9447
2.200	1.0923	1.1143	0.8912	0.9177	0.9504
2.400	1.0926	1.1101	0.8972	0.9227	0.9556
2.600	1.0929	1.1067	0.9023	0.9271	0.9602
2.800	1.0933	1.1040	0.9067	0.9310	0.9643
3.000	1.0934	1.1017	0.9103	0.9343	0.9676
3.200	1.0935	1.0999	0.9134	0.9373	0.9705
3.400	1.0939	1.0984	0.9163	0.9398	0.9733
3.600	1.0945	1.0973	0.9189	0.9421	0.9759
3.800	1.0953	1.0964	0.9213	0.9440	0.9784
4.000	1.0961	1.0957	0.9235	0.9458	0.9806
4.500	1.0979	1.0944	0.9280	0.9493	0.9855
5.000	1.0996	1.0936	0.9314	0.9520	0.9893
5.500	1.1012	1.0930	0.9341	0.9541	0.9925
6.000	1.1026	1.0927	0.9362	0.9558	0.9952
6.500	1.1039	1.0925	0.9379	0.9571	0.9974
7.000	1.1050	1.0923	0.9393	0.9581	0.9993

TABLE 4b. Ratios of collision integrals for the (12,6) potential function (Continued)

T^*	A^*	B^*	C^*	E^*	F^*
7.500	1.1061	1.0922	0.9405	0.9590	1.0009
8.000	1.1071	1.0922	0.9414	0.9597	1.0023
8.500	1.1080	1.0922	0.9422	0.9602	1.0035
9.000	1.1088	1.0923	0.9429	0.9607	1.0046
9.500	1.1097	1.0923	0.9436	0.9611	1.0056
10.000	1.1105	1.0924	0.9441	0.9614	1.0065
11.000	1.1119	1.0926	0.9450	0.9620	1.0081
12.000	1.1131	1.0928	0.9457	0.9624	1.0094
13.000	1.1142	1.0930	0.9462	0.9626	1.0104
14.000	1.1152	1.0932	0.9466	0.9628	1.0114
15.000	1.1161	1.0934	0.9469	0.9630	1.0122
16.000	1.1169	1.0935	0.9472	0.9631	1.0129
17.000	1.1176	1.0937	0.9474	0.9632	1.0135
18.000	1.1183	1.0938	0.9476	0.9633	1.0141
19.000	1.1190	1.0939	0.9477	0.9633	1.0146
20.000	1.1195	1.0941	0.9479	0.9634	1.0151
22.000	1.1206	1.0943	0.9480	0.9634	1.0159
24.000	1.1215	1.0945	0.9482	0.9634	1.0166
26.000	1.1223	1.0947	0.9482	0.9634	1.0171
28.000	1.1231	1.0949	0.9483	0.9634	1.0176
30.000	1.1237	1.0951	0.9483	0.9633	1.0181
32.000	1.1244	1.0952	0.9483	0.9633	1.0185
34.000	1.1249	1.0954	0.9483	0.9632	1.0188
36.000	1.1254	1.0955	0.9483	0.9632	1.0191
38.000	1.1259	1.0957	0.9483	0.9631	1.0194
40.000	1.1263	1.0958	0.9483	0.9631	1.0197
45.000	1.1272	1.0961	0.9483	0.9629	1.0202
50.000	1.1281	1.0963	0.9482	0.9628	1.0206
55.000	1.1287	1.0966	0.9481	0.9626	1.0210
60.000	1.1293	1.0968	0.9480	0.9625	1.0213
65.000	1.1299	1.0970	0.9480	0.9624	1.0215
70.000	1.1303	1.0971	0.9479	0.9623	1.0217
75.000	1.1307	1.0973	0.9478	0.9622	1.0219
80.000	1.1311	1.0974	0.9478	0.9621	1.0221
85.000	1.1315	1.0975	0.9477	0.9620	1.0223
90.000	1.1318	1.0976	0.9476	0.9619	1.0224
95.000	1.1320	1.0977	0.9476	0.9618	1.0225
100.000	1.1323	1.0978	0.9475	0.9617	1.0226
125.000	1.1334	1.0982	0.9473	0.9614	1.0231
150.000	1.1341	1.0985	0.9471	0.9612	1.0234
175.000	1.1347	1.0988	0.9469	0.9610	1.0236
200.000	1.1352	1.0990	0.9468	0.9608	1.0238

TABLE 4c. Tables of additional functions of the collision integrals for the (12,6) potential function

	Higher order corrections			Isotopic thermal diffusion ratios		
T^*	f_η	f_λ	$f_{\mathscr{D}}$	c.c.$_1$	Kihara$_1$	Kihara$_2$
.100	1.0017	1.0027	1.0017	.284	.288	.290
.150	1.0018	1.0028	1.0014	.258	.260	.264
.200	1.0018	1.0029	1.0010	.211	.211	.219
.250	1.0015	1.0024	1.0005	.154	.153	.161
.300	1.0010	1.0016	1.0002	.096	.096	.102
.350	1.0006	1.0009	1.0001	.049	.048	.052
.400	1.0003	1.0004	1.0000	.010	.010	.012
.450	1.0001	1.0001	1.0000	-.017	-.017	-.016
.500	1.0000	1.0000	1.0000	-.036	-.036	-.036
.550	1.0000	1.0000	1.0001	-.049	-.049	-.049
.600	1.0000	1.0000	1.0001	-.052	-.052	-.052
.650	1.0000	1.0001	1.0001	-.052	-.051	-.051
.700	1.0001	1.0001	1.0001	-.049	-.049	-.049
.750	1.0001	1.0001	1.0000	-.045	-.045	-.044
.800	1.0001	1.0001	1.0000	-.036	-.036	-.035
.850	1.0000	1.0001	1.0000	-.023	-.023	-.023
.900	1.0000	1.0001	1.0000	-.010	-.010	-.009
.950	1.0000	1.0000	1.0000	.004	.004	.004
1.000	1.0000	1.0000	1.0000	.016	.017	.017
1.100	1.0000	1.0000	1.0000	.041	.041	.040
1.200	1.0000	1.0000	1.0001	.069	.071	.069
1.300	1.0001	1.0001	1.0002	.099	.101	.098
1.400	1.0002	1.0003	1.0004	.127	.130	.126
1.500	1.0003	1.0005	1.0006	.153	.157	.152
1.600	1.0005	1.0008	1.0008	.176	.181	.175
1.700	1.0007	1.0011	1.0010	.197	.202	.195
1.800	1.0009	1.0014	1.0012	.217	.223	.216
1.900	1.0011	1.0017	1.0014	.237	.243	.236
2.000	1.0013	1.0021	1.0016	.256	.263	.255
2.200	1.0018	1.0028	1.0021	.290	.298	.290
2.400	1.0022	1.0035	1.0026	.319	.329	.320
2.600	1.0027	1.0041	1.0030	.345	.355	.347
2.800	1.0031	1.0048	1.0034	.366	.377	.370
3.000	1.0034	1.0054	1.0037	.384	.396	.389
3.200	1.0038	1.0059	1.0040	.399	.412	.405
3.400	1.0041	1.0064	1.0043	.413	.427	.421
3.600	1.0044	1.0069	1.0046	.426	.440	.435
3.800	1.0047	1.0073	1.0048	.438	.452	.447
4.000	1.0049	1.0076	1.0051	.448	.463	.459
4.500	1.0054	1.0084	1.0056	.470	.485	.482
5.000	1.0058	1.0090	1.0060	.486	.502	.500
5.500	1.0061	1.0095	1.0063	.498	.515	.514
6.000	1.0064	1.0099	1.0066	.508	.525	.526
6.500	1.0066	1.0103	1.0068	.516	.533	.535
7.000	1.0068	1.0105	1.0070	.522	.540	.542

TABLE 4c. Tables of additional functions of the collision integrals for the (12,6) potential function (Cont'd)

	Higher order corrections			Isotopic thermal diffusion ratios		
T^*	f_η	f_λ	$f_{\mathscr{D}}$	c.c.$_1$	Kihara$_1$	Kihara$_2$
7.500	1.0069	1.0107	1.0072	.528	.545	.548
8.000	1.0070	1.0109	1.0073	.532	.549	.553
8.500	1.0071	1.0111	1.0074	.535	.553	.557
9.000	1.0072	1.0112	1.0075	.538	.556	.560
9.500	1.0073	1.0113	1.0076	.541	.559	.563
10.000	1.0073	1.0114	1.0076	.543	.561	.566
11.000	1.0074	1.0115	1.0078	.547	.565	.570
12.000	1.0075	1.0116	1.0079	.550	.568	.574
13.000	1.0075	1.0117	1.0079	.552	.570	.576
14.000	1.0076	1.0118	1.0080	.553	.571	.578
15.000	1.0076	1.0118	1.0080	.555	.573	.579
16.000	1.0076	1.0118	1.0081	.555	.574	.580
17.000	1.0076	1.0119	1.0081	.556	.574	.581
18.000	1.0076	1.0119	1.0081	.557	.575	.582
19.000	1.0076	1.0119	1.0081	.557	.575	.582
20.000	1.0077	1.0119	1.0082	.557	.575	.583
22.000	1.0077	1.0119	1.0082	.558	.576	.583
24.000	1.0077	1.0119	1.0082	.558	.576	.583
26.000	1.0077	1.0119	1.0082	.558	.576	.584
28.000	1.0077	1.0119	1.0082	.558	.576	.583
30.000	1.0076	1.0119	1.0082	.558	.576	.583
32.000	1.0076	1.0119	1.0082	.557	.575	.583
34.000	1.0076	1.0119	1.0082	.557	.575	.583
36.000	1.0076	1.0118	1.0082	.557	.575	.583
38.000	1.0076	1.0118	1.0082	.557	.575	.582
40.000	1.0076	1.0118	1.0082	.556	.574	.582
45.000	1.0076	1.0118	1.0082	.556	.573	.581
50.000	1.0075	1.0117	1.0082	.555	.573	.581
55.000	1.0075	1.0117	1.0082	.554	.572	.580
60.000	1.0075	1.0117	1.0082	.554	.571	.579
65.000	1.0075	1.0116	1.0081	.553	.571	.578
70.000	1.0075	1.0116	1.0081	.553	.570	.578
75.000	1.0074	1.0116	1.0081	.552	.570	.577
80.000	1.0074	1.0116	1.0081	.552	.569	.577
85.000	1.0074	1.0115	1.0081	.551	.569	.576
90.000	1.0074	1.0115	1.0081	.551	.568	.576
95.000	1.0074	1.0115	1.0081	.550	.568	.575
100.000	1.0074	1.0115	1.0081	.550	.567	.575
125.000	1.0073	1.0114	1.0080	.548	.565	.573
150.000	1.0073	1.0113	1.0080	.547	.564	.572
175.000	1.0072	1.0113	1.0080	.546	.563	.570
200.000	1.0072	1.0112	1.0080	.545	.562	.570

TABLE 5a. Collision integrals for the $(15,6)$ potential function

T^*	$\Omega^{(1,1)*}$	$\Omega^{(2,2)*}$	$\Omega^{(1,2)*}$	$\Omega^{(1,3)*}$	$\Omega^{(2,3)*}$	$\Omega^{(3,3)*}$
.100	3.6513	3.7783	3.2394	2.9622	3.4684	3.4346
.150	3.1790	3.3103	2.8119	2.5591	3.0427	2.9780
.200	2.8718	3.0168	2.5250	2.2774	2.7745	2.6720
.250	2.6422	2.8068	2.3034	2.0556	2.5756	2.4406
.300	2.4585	2.6382	2.1238	1.8781	2.4083	2.2572
.350	2.3050	2.4971	1.9741	1.7341	2.2637	2.1053
.400	2.1721	2.3716	1.8471	1.6165	2.1340	1.9791
.450	2.0601	2.2585	1.7420	1.5217	2.0191	1.8716
.500	1.9599	2.1566	1.6511	1.4429	1.9172	1.7802
.550	1.8724	2.0682	1.5734	1.3773	1.8292	1.6991
.600	1.7975	1.9839	1.5082	1.3229	1.7498	1.6305
.650	1.7289	1.9085	1.4505	1.2763	1.6796	1.5696
.700	1.6668	1.8429	1.3998	1.2363	1.6190	1.5153
.750	1.6124	1.7833	1.3558	1.2019	1.5652	1.4675
.800	1.5647	1.7270	1.3176	1.1721	1.5164	1.4249
.850	1.5217	1.6756	1.2837	1.1460	1.4729	1.3873
.900	1.4814	1.6299	1.2530	1.1228	1.4342	1.3533
.950	1.4445	1.5889	1.2255	1.1021	1.3998	1.3224
1.000	1.4106	1.5509	1.2005	1.0836	1.3684	1.2940
1.100	1.3526	1.4845	1.1579	1.0518	1.3146	1.2456
1.200	1.3047	1.4271	1.1229	1.0257	1.2696	1.2052
1.300	1.2628	1.3777	1.0931	1.0036	1.2316	1.1707
1.400	1.2260	1.3360	1.0675	.9846	1.1996	1.1412
1.500	1.1937	1.3000	1.0453	.9682	1.1721	1.1157
1.600	1.1655	1.2682	1.0260	.9538	1.1481	1.0934
1.700	1.1407	1.2400	1.0089	.9409	1.1271	1.0737
1.800	1.1189	1.2148	.9938	.9295	1.1084	1.0563
1.900	1.0995	1.1923	.9804	.9192	1.0919	1.0407
2.000	1.0820	1.1722	.9682	.9098	1.0771	1.0267
2.200	1.0509	1.1376	.9469	.8933	1.0516	1.0025
2.400	1.0246	1.1091	.9289	.8793	1.0304	.9823
2.600	1.0023	1.0850	.9135	.8670	1.0125	.9651
2.800	.9830	1.0643	.9001	.8563	.9970	.9502
3.000	.9663	1.0464	.8883	.8466	.9835	.9372
3.200	.9516	1.0306	.8778	.8379	.9716	.9257
3.400	.9387	1.0167	.8683	.8301	.9610	.9155
3.600	.9271	1.0043	.8598	.8228	.9514	.9062
3.800	.9165	.9931	.8519	.8161	.9427	.8978
4.000	.9068	.9830	.8447	.8099	.9348	.8901
4.500	.8857	.9613	.8288	.7962	.9175	.8733
5.000	.8683	.9436	.8154	.7844	.9030	.8592
5.500	.8536	.9286	.8038	.7740	.8906	.8472
6.000	.8409	.9157	.7936	.7648	.8797	.8366
6.500	.8298	.9045	.7846	.7566	.8700	.8272
7.000	.8199	.8944	.7764	.7490	.8613	.8188

TABLE 5a. Collision integrals for the (15,6) potential function (Cont'd)

T^*	$\Omega^{(1,1)*}$	$\Omega^{(2,2)*}$	$\Omega^{(1,2)*}$	$\Omega^{(1,3)*}$	$\Omega^{(2,3)*}$	$\Omega^{(3,3)*}$
7.500	.8110	.8855	.7689	.7422	.8534	.8112
8.000	.8030	.8773	.7621	.7358	.8462	.8042
8.500	.7957	.8698	.7558	.7299	.8395	.7977
9.000	.7889	.8630	.7499	.7244	.8333	.7917
9.500	.7827	.8566	.7444	.7193	.8275	.7861
10.000	.7769	.8507	.7393	.7145	.8221	.7809
11.000	.7663	.8400	.7300	.7057	.8123	.7714
12.000	.7570	.8305	.7216	.6977	.8035	.7629
13.000	.7486	.8219	.7140	.6905	.7955	.7552
14.000	.7409	.8142	.7071	.6839	.7882	.7482
15.000	.7340	.8071	.7008	.6779	.7815	.7418
16.000	.7276	.8005	.6949	.6723	.7753	.7359
17.000	.7217	.7945	.6894	.6670	.7696	.7303
18.000	.7162	.7888	.6843	.6621	.7642	.7252
19.000	.7111	.7835	.6796	.6576	.7592	.7203
20.000	.7062	.7785	.6751	.6532	.7544	.7158
22.000	.6974	.7694	.6668	.6453	.7456	.7074
24.000	.6895	.7612	.6594	.6381	.7377	.6998
26.000	.6823	.7537	.6526	.6316	.7305	.6929
28.000	.6757	.7469	.6464	.6256	.7239	.6865
30.000	.6697	.7406	.6407	.6200	.7178	.6807
32.000	.6641	.7347	.6354	.6149	.7121	.6752
34.000	.6589	.7292	.6304	.6101	.7068	.6702
36.000	.6540	.7241	.6258	.6056	.7018	.6654
38.000	.6495	.7193	.6215	.6014	.6971	.6609
40.000	.6452	.7148	.6174	.5975	.6927	.6567
45.000	.6354	.7044	.6081	.5884	.6826	.6471
50.000	.6268	.6953	.5998	.5805	.6737	.6386
55.000	.6192	.6871	.5925	.5733	.6657	.6310
60.000	.6122	.6797	.5859	.5669	.6585	.6241
65.000	.6059	.6729	.5798	.5610	.6519	.6178
70.000	.6002	.6667	.5743	.5557	.6458	.6120
75.000	.5948	.6610	.5692	.5507	.6402	.6067
80.000	.5899	.6556	.5644	.5461	.6350	.6017
85.000	.5853	.6507	.5600	.5418	.6302	.5971
90.000	.5809	.6460	.5558	.5378	.6256	.5927
95.000	.5769	.6416	.5519	.5340	.6213	.5887
100.000	.5731	.6374	.5483	.5304	.6173	.5848
125.000	.5567	.6197	.5326	.5152	.5999	.5683
150.000	.5436	.6054	.5200	.5030	.5861	.5552
175.000	.5328	.5936	.5096	.4930	.5746	.5442
200.000	.5236	.5835	.5008	.4844	.5648	.5349

TABLE 5b. Ratios of collision integrals for the(15,6) potential function

T^*	A^*	B^*	C^*	E^*	F^*
0.100	1.0348	1.1909	0.8872	0.9180	0.9407
0.150	1.0413	1.2026	0.8845	0.9191	0.9368
0.200	1.0505	1.2241	0.8793	0.9197	0.9304
0.250	1.0623	1.2468	0.8718	0.9176	0.9237
0.300	1.0731	1.2636	0.8639	0.9128	0.9181
0.350	1.0833	1.2730	0.8565	0.9065	0.9133
0.400	1.0918	1.2750	0.8504	0.8998	0.9112
0.450	1.0963	1.2734	0.8456	0.8940	0.9085
0.500	1.1003	1.2674	0.8424	0.8890	0.9083
0.550	1.1046	1.2595	0.8403	0.8844	0.9074
0.600	1.1037	1.2513	0.8390	0.8820	0.9071
0.650	1.1038	1.2420	0.8390	0.8801	0.9078
0.700	1.1057	1.2321	0.8398	0.8785	0.9091
0.750	1.1060	1.2227	0.8408	0.8777	0.9101
0.800	1.1038	1.2139	0.8421	0.8780	0.9106
0.850	1.1012	1.2056	0.8436	0.8790	0.9117
0.900	1.1003	1.1975	0.8459	0.8800	0.9135
0.950	1.1000	1.1899	0.8484	0.8810	0.9155
1.000	1.0994	1.1826	0.8510	0.8823	0.9173
1.100	1.0976	1.1697	0.8561	0.8855	0.9209
1.200	1.0938	1.1587	0.8607	0.8897	0.9238
1.300	1.0909	1.1493	0.8656	0.8940	0.9271
1.400	1.0898	1.1412	0.8707	0.8979	0.9309
1.500	1.0890	1.1343	0.8757	0.9016	0.9346
1.600	1.0881	1.1282	0.8803	0.9053	0.9381
1.700	1.0871	1.1229	0.8845	0.9089	0.9413
1.800	1.0858	1.1182	0.8882	0.9124	0.9440
1.900	1.0844	1.1141	0.8916	0.9158	0.9465
2.000	1.0833	1.1106	0.8948	0.9189	0.9489
2.200	1.0826	1.1048	0.9010	0.9244	0.9540
2.400	1.0824	1.1004	0.9066	0.9291	0.9586
2.600	1.0825	1.0970	0.9115	0.9332	0.9629
2.800	1.0827	1.0941	0.9157	0.9368	0.9666
3.000	1.0829	1.0918	0.9193	0.9399	0.9699
3.200	1.0831	1.0899	0.9224	0.9427	0.9728
3.400	1.0831	1.0882	0.9251	0.9452	0.9753
3.600	1.0833	1.0868	0.9274	0.9474	0.9775
3.800	1.0836	1.0857	0.9295	0.9493	0.9796
4.000	1.0840	1.0848	0.9315	0.9509	0.9816
4.500	1.0854	1.0832	0.9358	0.9544	0.9860
5.000	1.0867	1.0821	0.9391	0.9570	0.9896
5.500	1.0879	1.0814	0.9417	0.9590	0.9925
6.000	1.0890	1.0808	0.9438	0.9606	0.9949
6.500	1.0900	1.0805	0.9455	0.9619	0.9969
7.000	1.0909	1.0802	0.9469	0.9629	0.9987

TABLE 5b. Ratios of collision integrals for the (15,6) potential function (Continued)

T^*	A^*	B^*	C^*	E^*	F^*
7.500	1.0917	1.0800	0.9480	0.9638	1.0002
8.000	1.0925	1.0798	0.9490	0.9645	1.0014
8.500	1.0932	1.0796	0.9498	0.9651	1.0025
9.000	1.0938	1.0795	0.9505	0.9656	1.0035
9.500	1.0944	1.0795	0.9511	0.9660	1.0044
10.000	1.0950	1.0794	0.9516	0.9664	1.0052
11.000	1.0961	1.0794	0.9525	0.9670	1.0067
12.000	1.0971	1.0793	0.9533	0.9675	1.0079
13.000	1.0980	1.0793	0.9539	0.9678	1.0089
14.000	1.0988	1.0793	0.9543	0.9681	1.0098
15.000	1.0995	1.0794	0.9547	0.9684	1.0106
16.000	1.1002	1.0794	0.9550	0.9685	1.0113
17.000	1.1008	1.0794	0.9553	0.9687	1.0120
18.000	1.1014	1.0794	0.9555	0.9688	1.0125
19.000	1.1019	1.0795	0.9557	0.9689	1.0130
20.000	1.1024	1.0795	0.9559	0.9690	1.0135
22.000	1.1033	1.0796	0.9561	0.9691	1.0143
24.000	1.1040	1.0797	0.9563	0.9692	1.0149
26.000	1.1047	1.0798	0.9565	0.9692	1.0155
28.000	1.1053	1.0799	0.9566	0.9692	1.0160
30.000	1.1058	1.0799	0.9567	0.9692	1.0164
32.000	1.1063	1.0800	0.9567	0.9692	1.0168
34.000	1.1068	1.0801	0.9568	0.9692	1.0171
36.000	1.1072	1.0802	0.9568	0.9692	1.0174
38.000	1.1075	1.0803	0.9569	0.9691	1.0176
40.000	1.1079	1.0803	0.9569	0.9691	1.0178
45.000	1.1086	1.0805	0.9569	0.9690	1.0183
50.000	1.1092	1.0806	0.9569	0.9689	1.0187
55.000	1.1097	1.0807	0.9569	0.9689	1.0190
60.000	1.1102	1.0808	0.9569	0.9688	1.0193
65.000	1.1106	1.0809	0.9569	0.9687	1.0195
70.000	1.1109	1.0810	0.9569	0.9687	1.0197
75.000	1.1112	1.0811	0.9569	0.9686	1.0199
80.000	1.1115	1.0811	0.9568	0.9685	1.0201
85.000	1.1117	1.0812	0.9568	0.9685	1.0202
90.000	1.1120	1.0813	0.9568	0.9685	1.0203
95.000	1.1122	1.0813	0.9568	0.9684	1.0204
100.000	1.1124	1.0814	0.9567	0.9684	1.0205
125.000	1.1131	1.0815	0.9567	0.9682	1.0209
150.000	1.1137	1.0817	0.9566	0.9681	1.0212
175.000	1.1141	1.0818	0.9565	0.9679	1.0214
200.000	1.1144	1.0819	0.9565	0.9679	1.0216

TABLE 5c. Tables of additional functions of the collision integrals for the (15,6) potential function

	Higher order corrections			Isotopic thermal diffusion ratios		
T^*	f_η	f_λ	$f_{\mathscr{D}}$	c.c.$_1$	Kihara$_1$	Kihara$_2$
.100	1.0018	1.0028	1.0018	.289	.293	.295
.150	1.0019	1.0030	1.0017	.274	.277	.280
.200	1.0020	1.0030	1.0013	.245	.246	.252
.250	1.0018	1.0028	1.0009	.203	.203	.211
.300	1.0014	1.0022	1.0006	.160	.160	.167
.350	1.0010	1.0015	1.0003	.121	.120	.125
.400	1.0006	1.0009	1.0002	.088	.088	.091
.450	1.0004	1.0005	1.0001	.063	.063	.065
.500	1.0002	1.0003	1.0001	.047	.047	.048
.550	1.0001	1.0001	1.0000	.036	.036	.036
.600	1.0000	1.0001	1.0000	.029	.029	.029
.650	1.0000	1.0000	1.0000	.029	.029	.029
.700	1.0000	1.0000	1.0000	.033	.033	.033
.750	1.0000	1.0000	1.0000	.038	.038	.038
.800	1.0000	1.0000	1.0000	.044	.044	.044
.850	1.0000	1.0000	1.0001	.052	.053	.052
.900	1.0000	1.0000	1.0001	.063	.064	.063
.950	1.0000	1.0001	1.0001	.076	.077	.076
1.000	1.0001	1.0001	1.0002	.089	.091	.089
1.100	1.0001	1.0002	1.0003	.115	.117	.114
1.200	1.0002	1.0003	1.0005	.138	.141	.137
1.300	1.0004	1.0006	1.0007	.163	.166	.162
1.400	1.0005	1.0008	1.0009	.189	.193	.188
1.500	1.0007	1.0011	1.0011	.214	.219	.213
1.600	1.0009	1.0014	1.0014	.237	.243	.236
1.700	1.0011	1.0018	1.0016	.258	.265	.257
1.800	1.0014	1.0021	1.0019	.277	.284	.277
1.900	1.0016	1.0025	1.0021	.294	.302	.294
2.000	1.0019	1.0029	1.0024	.310	.319	.311
2.200	1.0024	1.0037	1.0029	.341	.352	.343
2.400	1.0029	1.0045	1.0034	.369	.381	.372
2.600	1.0033	1.0052	1.0038	.393	.406	.398
2.800	1.0037	1.0058	1.0043	.414	.428	.420
3.000	1.0041	1.0064	1.0046	.432	.447	.440
3.200	1.0045	1.0070	1.0050	.448	.463	.456
3.400	1.0048	1.0075	1.0053	.461	.476	.471
3.600	1.0051	1.0080	1.0056	.472	.488	.483
3.800	1.0054	1.0084	1.0058	.483	.499	.495
4.000	1.0057	1.0088	1.0061	.493	.510	.506
4.500	1.0062	1.0096	1.0066	.513	.531	.529
5.000	1.0066	1.0102	1.0070	.529	.548	.547
5.500	1.0069	1.0108	1.0074	.541	.560	.561
6.000	1.0072	1.0112	1.0076	.551	.571	.572
6.500	1.0074	1.0115	1.0079	.559	.579	.581
7.000	1.0076	1.0118	1.0081	.565	.585	.588

TABLE 5c. Tables of additional functions of the collision integrals for the (15,6) potential function (Cont'd)

	Higher order corrections			Isotopic thermal diffusion ratios		
T^*	f_η	f_λ	$f_{D\theta}$	$c.c._1$	$Kihara_1$	$Kihara_2$
7.500	1.0077	1.0120	1.0082	.571	.591	.595
8.000	1.0078	1.0122	1.0084	.575	.596	.600
8.500	1.0080	1.0124	1.0085	.579	.599	.604
9.000	1.0080	1.0125	1.0086	.582	.603	.607
9.500	1.0081	1.0126	1.0087	.585	.605	.611
10.000	1.0082	1.0127	1.0088	.587	.608	.613
11.000	1.0083	1.0129	1.0089	.591	.612	.618
12.000	1.0084	1.0130	1.0090	.594	.615	.621
13.000	1.0084	1.0131	1.0091	.596	.617	.624
14.000	1.0085	1.0132	1.0092	.598	.619	.627
15.000	1.0085	1.0133	1.0092	.600	.621	.628
16.000	1.0086	1.0133	1.0093	.601	.622	.630
17.000	1.0086	1.0134	1.0093	.602	.623	.631
18.000	1.0086	1.0134	1.0093	.603	.624	.632
19.000	1.0086	1.0134	1.0094	.603	.625	.633
20.000	1.0087	1.0135	1.0094	.604	.625	.633
22.000	1.0087	1.0135	1.0094	.605	.626	.634
24.000	1.0087	1.0135	1.0094	.605	.627	.635
26.000	1.0087	1.0135	1.0095	.606	.627	.635
28.000	1.0087	1.0135	1.0095	.606	.627	.636
30.000	1.0087	1.0135	1.0095	.606	.627	.636
32.000	1.0087	1.0135	1.0095	.606	.627	.636
34.000	1.0087	1.0135	1.0095	.606	.627	.636
36.000	1.0087	1.0135	1.0095	.606	.627	.636
38.000	1.0087	1.0135	1.0095	.606	.627	.636
40.000	1.0087	1.0135	1.0095	.606	.627	.636
45.000	1.0087	1.0135	1.0095	.606	.627	.636
50.000	1.0086	1.0134	1.0095	.605	.627	.636
55.000	1.0086	1.0134	1.0095	.605	.626	.635
60.000	1.0086	1.0134	1.0095	.605	.626	.635
65.000	1.0086	1.0134	1.0095	.605	.626	.635
70.000	1.0086	1.0134	1.0095	.604	.626	.634
75.000	1.0086	1.0134	1.0095	.604	.625	.634
80.000	1.0086	1.0133	1.0095	.604	.625	.634
85.000	1.0086	1.0133	1.0095	.604	.625	.633
90.000	1.0086	1.0133	1.0095	.603	.625	.633
95.000	1.0085	1.0133	1.0095	.603	.624	.633
100.000	1.0085	1.0133	1.0095	.603	.624	.633
125.000	1.0085	1.0132	1.0095	.602	.623	.632
150.000	1.0085	1.0132	1.0095	.601	.622	.631
175.000	1.0085	1.0132	1.0094	.601	.622	.630
200.000	1.0084	1.0131	1.0094	.600	.621	.630

TABLE 6a. Collision integrals for the (18,6) potential function

T^*	$\Omega^{(1,1)*}$	$\Omega^{(2,2)*}$	$\Omega^{(1,2)*}$	$\Omega^{(1,3)*}$	$\Omega^{(2,3)*}$	$\Omega^{(3,3)*}$
.100	3.4376	3.5794	3.0510	2.7923	3.2867	3.2385
.150	2.9961	3.1375	2.6548	2.4226	2.8848	2.8166
.200	2.7121	2.8620	2.3936	2.1703	2.6342	2.5371
.250	2.5030	2.6645	2.1957	1.9746	2.4495	2.3280
.300	2.3366	2.5101	2.0351	1.8163	2.2988	2.1614
.350	2.1977	2.3797	1.9010	1.6871	2.1674	2.0255
.400	2.0809	2.2634	1.7895	1.5824	2.0498	1.9126
.450	1.9778	2.1652	1.6929	1.4948	1.9489	1.8136
.500	1.8903	2.0714	1.6124	1.4235	1.8561	1.7308
.550	1.8107	1.9903	1.5415	1.3630	1.7759	1.6582
.600	1.7414	1.9179	1.4809	1.3122	1.7054	1.5937
.650	1.6812	1.8489	1.4291	1.2694	1.6414	1.5385
.700	1.6261	1.7873	1.3832	1.2325	1.5850	1.4896
.750	1.5756	1.7330	1.3422	1.2002	1.5354	1.4451
.800	1.5307	1.6836	1.3062	1.1721	1.4912	1.4057
.850	1.4914	1.6379	1.2749	1.1477	1.4515	1.3707
.900	1.4560	1.5950	1.2470	1.1262	1.4154	1.3394
.950	1.4228	1.5561	1.2216	1.1069	1.3829	1.3110
1.000	1.3919	1.5212	1.1984	1.0894	1.3538	1.2850
1.100	1.3377	1.4604	1.1586	1.0597	1.3038	1.2397
1.200	1.2926	1.4082	1.1256	1.0350	1.2620	1.2018
1.300	1.2545	1.3623	1.0979	1.0143	1.2264	1.1698
1.400	1.2212	1.3230	1.0742	.9966	1.1963	1.1423
1.500	1.1915	1.2892	1.0535	.9812	1.1703	1.1184
1.600	1.1651	1.2598	1.0353	.9676	1.1479	1.0975
1.700	1.1419	1.2337	1.0193	.9556	1.1282	1.0791
1.800	1.1212	1.2102	1.0051	.9449	1.1107	1.0626
1.900	1.1029	1.1892	.9924	.9353	1.0951	1.0480
2.000	1.0866	1.1704	.9810	.9265	1.0812	1.0349
2.200	1.0582	1.1378	.9612	.9112	1.0572	1.0123
2.400	1.0338	1.1110	.9445	.8981	1.0373	.9933
2.600	1.0130	1.0884	.9301	.8867	1.0204	.9772
2.800	.9950	1.0691	.9176	.8768	1.0060	.9633
3.000	.9793	1.0523	.9066	.8678	.9934	.9512
3.200	.9656	1.0376	.8968	.8598	.9823	.9405
3.400	.9533	1.0245	.8880	.8525	.9724	.9309
3.600	.9425	1.0129	.8801	.8459	.9635	.9223
3.800	.9328	1.0025	.8728	.8397	.9554	.9145
4.000	.9238	.9930	.8662	.8341	.9480	.9074
4.500	.9044	.9728	.8515	.8215	.9321	.8919
5.000	.8882	.9564	.8392	.8106	.9187	.8790
5.500	.8746	.9425	.8285	.8012	.9074	.8679
6.000	.8628	.9306	.8192	.7928	.8974	.8583
6.500	.8526	.9203	.8109	.7853	.8886	.8497
7.000	.8435	.9111	.8034	.7785	.8807	.8421

TABLE 6a. Collision integrals for the (18,6) potential function (Cont'd)

T^*	$\Omega^{(1,1)*}$	$\Omega^{(2,2)*}$	$\Omega^{(1,2)*}$	$\Omega^{(1,3)*}$	$\Omega^{(2,3)*}$	$\Omega^{(3,3)*}$
7.500	.8353	.9029	.7966	.7722	.8736	.8351
8.000	.8279	.8954	.7904	.7665	.8670	.8288
8.500	.8212	.8886	.7846	.7611	.8610	.8229
9.000	.8150	.8824	.7793	.7562	.8554	.8175
9.500	.8093	.8766	.7743	.7515	.8502	.8125
10.000	.8040	.8712	.7697	.7471	.8453	.8078
11.000	.7944	.8615	.7612	.7391	.8364	.7992
12.000	.7858	.8529	.7536	.7319	.8284	.7915
13.000	.7782	.8452	.7467	.7254	.8212	.7845
14.000	.7713	.8381	.7404	.7194	.8147	.7781
15.000	.7649	.8317	.7347	.7139	.8086	.7723
16.000	.7591	.8258	.7293	.7088	.8030	.7669
17.000	.7537	.8203	.7244	.7041	.7978	.7619
18.000	.7487	.8152	.7198	.6996	.7929	.7572
19.000	.7441	.8104	.7154	.6954	.7884	.7528
20.000	.7397	.8059	.7113	.6915	.7841	.7487
22.000	.7317	.7977	.7038	.6843	.7762	.7410
24.000	.7245	.7902	.6971	.6778	.7690	.7342
26.000	.7179	.7835	.6909	.6718	.7625	.7279
28.000	.7120	.7773	.6853	.6664	.7566	.7222
30.000	.7065	.7716	.6801	.6613	.7510	.7169
32.000	.7014	.7663	.6753	.6567	.7459	.7120
34.000	.6967	.7614	.6708	.6523	.7411	.7074
36.000	.6922	.7568	.6666	.6482	.7366	.7031
38.000	.6881	.7524	.6626	.6444	.7324	.6990
40.000	.6842	.7483	.6589	.6408	.7284	.6952
45.000	.6753	.7390	.6504	.6325	.7194	.6865
50.000	.6675	.7308	.6429	.6252	.7113	.6788
55.000	.6605	.7234	.6362	.6187	.7041	.6719
60.000	.6542	.7167	.6302	.6128	.6976	.6656
65.000	.6485	.7106	.6246	.6075	.6917	.6599
70.000	.6432	.7050	.6196	.6025	.6862	.6547
75.000	.6383	.6999	.6149	.5980	.6811	.6498
80.000	.6338	.6950	.6106	.5938	.6764	.6453
85.000	.6296	.6905	.6065	.5898	.6720	.6411
90.000	.6256	.6863	.6027	.5861	.6679	.6371
95.000	.6219	.6823	.5991	.5826	.6640	.6334
100.000	.6184	.6786	.5958	.5794	.6603	.6299
125.000	.6034	.6625	.5813	.5653	.6446	.6149
150.000	.5914	.6496	.5697	.5540	.6320	.6028
175.000	.5815	.6388	.5601	.5447	.6215	.5928
200.000	.5730	.6296	.5520	.5367	.6125	.5842

TABLE 6b. Ratios of collision integrals for the (18,6) potential function

T^*	A^*	B^*	C^*	E^*	F^*
0.100	1.0412	1.1886	0.8875	0.9182	0.9421
0.150	1.0472	1.1960	0.8861	0.9194	0.9401
0.200	1.0553	1.2119	0.8826	0.9204	0.9355
0.250	1.0645	1.2305	0.8772	0.9193	0.9301
0.300	1.0743	1.2455	0.8710	0.9158	0.9250
0.350	1.0828	1.2544	0.8650	0.9108	0.9216
0.400	1.0877	1.2580	0.8600	0.9056	0.9192
0.450	1.0947	1.2564	0.8559	0.9001	0.9170
0.500	1.0958	1.2527	0.8530	0.8961	0.9156
0.550	1.0992	1.2457	0.8513	0.8923	0.9158
0.600	1.1014	1.2378	0.8504	0.8892	0.9152
0.650	1.0997	1.2300	0.8500	0.8878	0.9151
0.700	1.0992	1.2214	0.8506	0.8868	0.9160
0.750	1.0999	1.2123	0.8519	0.8860	0.9172
0.800	1.0999	1.2037	0.8533	0.8857	0.9183
0.850	1.0982	1.1958	0.8548	0.8862	0.9191
0.900	1.0955	1.1884	0.8565	0.8874	0.9200
0.950	1.0937	1.1812	0.8586	0.8887	0.9214
1.000	1.0929	1.1743	0.8610	0.8900	0.9232
1.100	1.0917	1.1618	0.8661	0.8928	0.9267
1.200	1.0894	1.1511	0.8708	0.8962	0.9298
1.300	1.0860	1.1417	0.8752	0.9003	0.9325
1.400	1.0833	1.1339	0.8796	0.9042	0.9354
1.500	1.0821	1.1270	0.8842	0.9078	0.9386
1.600	1.0812	1.1210	0.8886	0.9112	0.9419
1.700	1.0804	1.1158	0.8927	0.9145	0.9450
1.800	1.0794	1.1112	0.8965	0.9178	0.9478
1.900	1.0783	1.1071	0.8998	0.9208	0.9503
2.000	1.0771	1.1035	0.9029	0.9238	0.9525
2.200	1.0753	1.0975	0.9084	0.9291	0.9566
2.400	1.0746	1.0930	0.9136	0.9337	0.9608
2.600	1.0744	1.0894	0.9182	0.9376	0.9647
2.800	1.0744	1.0865	0.9222	0.9410	0.9681
3.000	1.0745	1.0841	0.9257	0.9440	0.9713
3.200	1.0746	1.0821	0.9288	0.9467	0.9740
3.400	1.0747	1.0804	0.9315	0.9491	0.9765
3.600	1.0747	1.0789	0.9337	0.9512	0.9786
3.800	1.0747	1.0776	0.9358	0.9530	0.9804
4.000	1.0749	1.0766	0.9376	0.9547	0.9822
4.500	1.0757	1.0746	0.9416	0.9581	0.9862
5.000	1.0767	1.0733	0.9448	0.9607	0.9896
5.500	1.0777	1.0724	0.9474	0.9627	0.9924
6.000	1.0786	1.0717	0.9494	0.9643	0.9947
6.500	1.0794	1.0712	0.9511	0.9656	0.9967
7.000	1.0801	1.0707	0.9525	0.9667	0.9983

TABLE 6b. Ratios of collision integrals for the (18,6) potential function (Continued)

T^*	A^*	B^*	C^*	E^*	F^*
7.500	1.0808	1.0704	0.9536	0.9675	0.9998
8.000	1.0815	1.0702	0.9546	0.9683	1.0010
8.500	1.0821	1.0699	0.9555	0.9689	1.0021
9.000	1.0826	1.0697	0.9562	0.9694	1.0031
9.500	1.0831	1.0696	0.9568	0.9699	1.0039
10.000	1.0836	1.0695	0.9573	0.9702	1.0047
11.000	1.0845	1.0693	0.9582	0.9709	1.0060
12.000	1.0853	1.0692	0.9590	0.9713	1.0072
13.000	1.0861	1.0691	0.9596	0.9717	1.0081
14.000	1.0867	1.0691	0.9600	0.9720	1.0089
15.000	1.0873	1.0690	0.9604	0.9722	1.0096
16.000	1.0878	1.0690	0.9608	0.9724	1.0103
17.000	1.0883	1.0690	0.9611	0.9726	1.0108
18.000	1.0888	1.0690	0.9613	0.9727	1.0113
19.000	1.0892	1.0690	0.9615	0.9728	1.0118
20.000	1.0896	1.0689	0.9617	0.9729	1.0121
22.000	1.0902	1.0689	0.9620	0.9731	1.0128
24.000	1.0908	1.0689	0.9622	0.9732	1.0134
26.000	1.0913	1.0689	0.9624	0.9732	1.0139
28.000	1.0918	1.0689	0.9625	0.9733	1.0144
30.000	1.0922	1.0689	0.9627	0.9733	1.0147
32.000	1.0926	1.0689	0.9628	0.9734	1.0151
34.000	1.0929	1.0690	0.9628	0.9734	1.0154
36.000	1.0932	1.0690	0.9629	0.9734	1.0156
38.000	1.0935	1.0690	0.9630	0.9734	1.0159
40.000	1.0938	1.0690	0.9630	0.9734	1.0161
45.000	1.0944	1.0691	0.9631	0.9734	1.0165
50.000	1.0948	1.0691	0.9632	0.9734	1.0169
55.000	1.0952	1.0691	0.9632	0.9733	1.0172
60.000	1.0956	1.0692	0.9633	0.9733	1.0174
65.000	1.0959	1.0692	0.9633	0.9733	1.0177
70.000	1.0962	1.0692	0.9633	0.9733	1.0178
75.000	1.0964	1.0693	0.9633	0.9732	1.0180
80.000	1.0966	1.0693	0.9633	0.9732	1.0181
85.000	1.0968	1.0693	0.9633	0.9732	1.0183
90.000	1.0970	1.0693	0.9633	0.9732	1.0184
95.000	1.0971	1.0694	0.9633	0.9731	1.0185
100.000	1.0973	1.0694	0.9633	0.9731	1.0186
125.000	1.0979	1.0695	0.9633	0.9730	1.0190
150.000	1.0983	1.0695	0.9633	0.9729	1.0192
175.000	1.0986	1.0696	0.9633	0.9729	1.0194
200.000	1.0988	1.0696	0.9633	0.9728	1.0195

TABLE 6c. Tables of additional functions of the collision integrals for the (18,6) potential function

	Higher order corrections			Isotopic thermal diffusion ratios		
T^*	f_η	f_λ	$f_{\mathscr{D}}$	c.c.$_1$	Kihara$_1$	Kihara$_2$
.100	1.0018	1.0028	1.0019	.289	.293	.295
.150	1.0019	1.0030	1.0018	.280	.283	.286
.200	1.0020	1.0031	1.0015	.260	.262	.267
.250	1.0019	1.0030	1.0012	.231	.232	.238
.300	1.0016	1.0025	1.0009	.197	.197	.203
.350	1.0013	1.0019	1.0006	.165	.164	.170
.400	1.0009	1.0014	1.0004	.138	.138	.142
.450	1.0006	1.0010	1.0003	.116	.116	.119
.500	1.0004	1.0007	1.0002	.101	.101	.103
.550	1.0003	1.0005	1.0002	.092	.092	.093
.600	1.0002	1.0003	1.0002	.087	.087	.088
.650	1.0002	1.0002	1.0002	.085	.085	.085
.700	1.0001	1.0002	1.0002	.088	.088	.088
.750	1.0001	1.0002	1.0002	.094	.095	.094
.800	1.0001	1.0002	1.0002	.101	.102	.101
.850	1.0001	1.0002	1.0003	.109	.110	.109
.900	1.0002	1.0002	1.0003	.117	.119	.117
.950	1.0002	1.0003	1.0004	.128	.130	.128
1.000	1.0002	1.0003	1.0005	.140	.142	.140
1.100	1.0003	1.0005	1.0007	.166	.169	.165
1.200	1.0004	1.0007	1.0009	.190	.193	.189
1.300	1.0006	1.0010	1.0011	.212	.217	.211
1.400	1.0008	1.0013	1.0013	.235	.240	.234
1.500	1.0011	1.0016	1.0016	.258	.264	.257
1.600	1.0013	1.0020	1.0019	.280	.287	.280
1.700	1.0015	1.0024	1.0022	.301	.309	.301
1.800	1.0018	1.0028	1.0025	.320	.329	.321
1.900	1.0021	1.0032	1.0028	.337	.347	.338
2.000	1.0023	1.0036	1.0030	.352	.363	.354
2.200	1.0029	1.0045	1.0035	.380	.393	.384
2.400	1.0034	1.0052	1.0041	.407	.420	.411
2.600	1.0038	1.0060	1.0045	.430	.444	.436
2.800	1.0043	1.0066	1.0050	.450	.465	.458
3.000	1.0047	1.0073	1.0054	.467	.484	.477
3.200	1.0050	1.0078	1.0057	.483	.500	.494
3.400	1.0054	1.0084	1.0061	.496	.514	.508
3.600	1.0057	1.0088	1.0063	.507	.526	.521
3.800	1.0060	1.0093	1.0066	.517	.536	.532
4.000	1.0062	1.0097	1.0068	.526	.545	.542
4.500	1.0068	1.0105	1.0074	.546	.566	.564
5.000	1.0072	1.0112	1.0078	.562	.582	.582
5.500	1.0075	1.0117	1.0082	.574	.595	.596
6.000	1.0078	1.0122	1.0085	.584	.605	.607
6.500	1.0080	1.0125	1.0087	.592	.614	.616
7.000	1.0082	1.0128	1.0089	.598	.620	.624

TABLE 6c. Tables of additional functions of the collision integrals for the (18,6) potential function (Cont'd)

	Higher order corrections			Isotopic thermal diffusion ratios		
T^*	f_η	f_λ	$f_{\mathscr{D}\theta}$	c.c.$_1$	Kihara$_1$	Kihara$_2$
7.500	1.0084	1.0131	1.0091	.603	.626	.630
8.000	1.0085	1.0133	1.0092	.608	.631	.635
8.500	1.0086	1.0134	1.0094	.612	.635	.640
9.000	1.0087	1.0136	1.0095	.615	.638	.644
9.500	1.0088	1.0137	1.0096	.618	.641	.647
10.000	1.0089	1.0138	1.0097	.620	.644	.650
11.000	1.0090	1.0140	1.0098	.624	.648	.654
12.000	1.0091	1.0141	1.0099	.627	.651	.658
13.000	1.0092	1.0142	1.0100	.630	.654	.661
14.000	1.0092	1.0143	1.0101	.632	.656	.664
15.000	1.0093	1.0144	1.0101	.634	.658	.666
16.000	1.0093	1.0145	1.0102	.635	.659	.667
17.000	1.0093	1.0145	1.0102	.636	.660	.669
18.000	1.0094	1.0145	1.0103	.637	.661	.670
19.000	1.0094	1.0146	1.0103	.638	.662	.671
20.000	1.0094	1.0146	1.0103	.639	.663	.671
22.000	1.0094	1.0147	1.0104	.640	.664	.673
24.000	1.0094	1.0147	1.0104	.640	.665	.674
26.000	1.0095	1.0147	1.0104	.641	.665	.674
28.000	1.0095	1.0147	1.0105	.641	.666	.675
30.000	1.0095	1.0147	1.0105	.642	.666	.675
32.000	1.0095	1.0147	1.0105	.642	.666	.676
34.000	1.0095	1.0147	1.0105	.642	.667	.676
36.000	1.0095	1.0148	1.0105	.642	.667	.676
38.000	1.0095	1.0148	1.0105	.643	.667	.676
40.000	1.0095	1.0148	1.0105	.643	.667	.676
45.000	1.0095	1.0148	1.0105	.643	.667	.677
50.000	1.0095	1.0147	1.0106	.643	.667	.677
55.000	1.0095	1.0147	1.0106	.643	.667	.677
60.000	1.0095	1.0147	1.0106	.643	.667	.677
65.000	1.0095	1.0147	1.0106	.643	.667	.677
70.000	1.0095	1.0147	1.0106	.643	.667	.676
75.000	1.0095	1.0147	1.0106	.643	.667	.676
80.000	1.0094	1.0147	1.0106	.643	.667	.676
85.000	1.0094	1.0147	1.0106	.642	.667	.676
90.000	1.0094	1.0147	1.0106	.642	.667	.676
95.000	1.0094	1.0147	1.0106	.642	.666	.676
100.000	1.0094	1.0147	1.0106	.642	.666	.676
125.000	1.0094	1.0146	1.0106	.642	.666	.676
150.000	1.0094	1.0146	1.0106	.642	.666	.675
175.000	1.0094	1.0146	1.0106	.641	.665	.675
200.000	1.0094	1.0146	1.0106	.641	.665	.675

TABLE 7a. Collision integrals for the (21,6) potential function

T^*	$\Omega^{(1,1)*}$	$\Omega^{(2,2)*}$	$\Omega^{(1,2)*}$	$\Omega^{(1,3)*}$	$\Omega^{(2,3)*}$	$\Omega^{(3,3)*}$
.100	3.2971	3.4469	2.9268	2.6796	3.1650	3.1075
.150	2.8750	3.0208	2.5495	2.3298	2.7767	2.7057
.200	2.6050	2.7542	2.3038	2.0954	2.5345	2.4439
.250	2.4083	2.5659	2.1202	1.9161	2.3606	2.2484
.300	2.2527	2.4186	1.9722	1.7712	2.2191	2.0945
.350	2.1244	2.2947	1.8497	1.6532	2.0965	1.9692
.400	2.0159	2.1906	1.7466	1.5561	1.9915	1.8621
.450	1.9210	2.0954	1.6580	1.4753	1.8958	1.7728
.500	1.8395	2.0127	1.5830	1.4083	1.8127	1.6939
.550	1.7676	1.9345	1.5185	1.3525	1.7368	1.6278
.600	1.7021	1.8672	1.4612	1.3043	1.6710	1.5675
.650	1.6460	1.8060	1.4127	1.2639	1.6127	1.5151
.700	1.5958	1.7476	1.3702	1.2292	1.5594	1.4693
.750	1.5497	1.6959	1.3323	1.1989	1.5124	1.4283
.800	1.5075	1.6501	1.2984	1.1723	1.4710	1.3912
.850	1.4696	1.6081	1.2683	1.1489	1.4339	1.3580
.900	1.4364	1.5686	1.2419	1.1283	1.3999	1.3280
.950	1.4062	1.5322	1.2183	1.1102	1.3693	1.3013
1.000	1.3781	1.4987	1.1968	1.0938	1.3416	1.2771
1.100	1.3273	1.4412	1.1591	1.0654	1.2941	1.2343
1.200	1.2842	1.3921	1.1276	1.0420	1.2545	1.1983
1.300	1.2482	1.3496	1.1014	1.0223	1.2210	1.1680
1.400	1.2172	1.3124	1.0790	1.0055	1.1924	1.1421
1.500	1.1896	1.2799	1.0594	.9910	1.1677	1.1195
1.600	1.1649	1.2520	1.0423	.9782	1.1465	1.0997
1.700	1.1429	1.2274	1.0272	.9669	1.1278	1.0824
1.800	1.1233	1.2054	1.0137	.9568	1.1114	1.0670
1.900	1.1059	1.1857	1.0017	.9477	1.0967	1.0532
2.000	1.0902	1.1679	.9909	.9395	1.0835	1.0408
2.200	1.0635	1.1371	.9722	.9252	1.0609	1.0195
2.400	1.0408	1.1116	.9565	.9129	1.0421	1.0017
2.600	1.0212	1.0904	.9430	.9023	1.0263	.9866
2.800	1.0043	1.0721	.9313	.8930	1.0127	.9735
3.000	.9895	1.0563	.9210	.8847	1.0008	.9621
3.200	.9765	1.0425	.9118	.8772	.9904	.9521
3.400	.9650	1.0302	.9036	.8704	.9811	.9431
3.600	.9547	1.0193	.8961	.8642	.9728	.9350
3.800	.9455	1.0094	.8894	.8585	.9652	.9277
4.000	.9371	1.0006	.8832	.8533	.9583	.9210
4.500	.9191	.9816	.8696	.8416	.9434	.9066
5.000	.9039	.9662	.8581	.8316	.9310	.8946
5.500	.8912	.9532	.8482	.8229	.9204	.8843
6.000	.8802	.9422	.8396	.8152	.9112	.8754
6.500	.8707	.9325	.8319	.8083	.9031	.8675
7.000	.8622	.9240	.8250	.8020	.8958	.8604

TABLE 7a. Collision integrals for the (21,6) potential function (Cont'd)

T^*	$\Omega^{(1,1)*}$	$\Omega^{(2,2)*}$	$\Omega^{(1,2)*}$	$\Omega^{(1,3)*}$	$\Omega^{(2,3)*}$	$\Omega^{(3,3)*}$
7.500	.8547	.9163	.8187	.7963	.8892	.8540
8.000	.8478	.9094	.8130	.7910	.8832	.8482
8.500	.8416	.9032	.8077	.7861	.8776	.8428
9.000	.8358	.8974	.8028	.7815	.8725	.8378
9.500	.8306	.8921	.7982	.7773	.8677	.8332
10.000	.8257	.8871	.7940	.7733	.8633	.8289
11.000	.8168	.8782	.7862	.7660	.8552	.8210
12.000	.8089	.8703	.7792	.7594	.8479	.8140
13.000	.8019	.8632	.7729	.7534	.8414	.8077
14.000	.7955	.8568	.7672	.7480	.8354	.8019
15.000	.7897	.8510	.7619	.7429	.8299	.7966
16.000	.7844	.8456	.7570	.7383	.8248	.7916
17.000	.7794	.8406	.7525	.7339	.8201	.7871
18.000	.7748	.8359	.7483	.7299	.8156	.7828
19.000	.7706	.8315	.7443	.7261	.8115	.7788
20.000	.7665	.8275	.7406	.7225	.8076	.7750
22.000	.7592	.8199	.7337	.7158	.8004	.7681
24.000	.7526	.8132	.7275	.7099	.7939	.7618
26.000	.7466	.8070	.7219	.7044	.7880	.7561
28.000	.7412	.8014	.7168	.6994	.7825	.7508
30.000	.7361	.7962	.7120	.6948	.7775	.7460
32.000	.7315	.7914	.7076	.6906	.7728	.7415
34.000	.7272	.7869	.7035	.6866	.7685	.7373
36.000	.7231	.7827	.6996	.6828	.7644	.7334
38.000	.7193	.7788	.6960	.6793	.7606	.7297
40.000	.7158	.7751	.6926	.6760	.7569	.7262
45.000	.7076	.7666	.6848	.6684	.7487	.7182
50.000	.7005	.7591	.6780	.6617	.7414	.7112
55.000	.6941	.7524	.6718	.6558	.7348	.7049
60.000	.6883	.7463	.6663	.6503	.7289	.6992
65.000	.6830	.7407	.6612	.6454	.7235	.6940
70.000	.6782	.7357	.6565	.6409	.7185	.6892
75.000	.6737	.7309	.6522	.6367	.7139	.6847
80.000	.6696	.7266	.6482	.6328	.7096	.6806
85.000	.6657	.7225	.6445	.6291	.7056	.6768
90.000	.6621	.7186	.6410	.6257	.7018	.6731
95.000	.6587	.7150	.6377	.6225	.6983	.6697
100.000	.6555	.7116	.6346	.6195	.6950	.6665
125.000	.6417	.6969	.6213	.6065	.6806	.6527
150.000	.6306	.6851	.6106	.5961	.6690	.6416
175.000	.6214	.6753	.6017	.5874	.6594	.6324
200.000	.6136	.6669	.5941	.5800	.6512	.6245

TABLE 7b. Ratios of collision integrals for the (21,6)potential function

T^*	A^*	B^*	C^*	E^*	F^*
0.100	1.0454	1.1876	0.8877	0.9182	0.9425
0.150	1.0507	1.1925	0.8868	0.9192	0.9411
0.200	1.0573	1.2043	0.8844	0.9202	0.9381
0.250	1.0654	1.2194	0.8804	0.9200	0.9336
0.300	1.0737	1.2324	0.8755	0.9175	0.9298
0.350	1.0802	1.2407	0.8707	0.9136	0.9269
0.400	1.0866	1.2445	0.8664	0.9091	0.9237
0.450	1.0908	1.2436	0.8631	0.9047	0.9229
0.500	1.0942	1.2403	0.8606	0.9006	0.9209
0.550	1.0944	1.2348	0.8591	0.8978	0.9209
0.600	1.0970	1.2273	0.8585	0.8949	0.9209
0.650	1.0972	1.2198	0.8583	0.8930	0.9205
0.700	1.0951	1.2122	0.8586	0.8923	0.9207
0.750	1.0944	1.2041	0.8597	0.8918	0.9217
0.800	1.0946	1.1959	0.8613	0.8915	0.9228
0.850	1.0942	1.1880	0.8630	0.8917	0.9240
0.900	1.0920	1.1808	0.8646	0.8924	0.9245
0.950	1.0896	1.1741	0.8664	0.8937	0.9254
1.000	1.0875	1.1677	0.8685	0.8952	0.9267
1.100	1.0858	1.1555	0.8732	0.8979	0.9299
1.200	1.0840	1.1449	0.8781	0.9011	0.9331
1.300	1.0813	1.1357	0.8824	0.9047	0.9358
1.400	1.0782	1.1278	0.8864	0.9086	0.9383
1.500	1.0759	1.1209	0.8906	0.9124	0.9411
1.600	1.0748	1.1149	0.8948	0.9157	0.9441
1.700	1.0739	1.1097	0.8988	0.9189	0.9470
1.800	1.0731	1.1050	0.9024	0.9220	0.9498
1.900	1.0722	1.1010	0.9058	0.9249	0.9524
2.000	1.0713	1.0974	0.9089	0.9278	0.9547
2.200	1.0693	1.0913	0.9142	0.9330	0.9586
2.400	1.0680	1.0866	0.9190	0.9375	0.9624
2.600	1.0677	1.0829	0.9234	0.9413	0.9661
2.800	1.0675	1.0800	0.9273	0.9446	0.9693
3.000	1.0675	1.0776	0.9308	0.9475	0.9723
3.200	1.0675	1.0756	0.9338	0.9501	0.9749
3.400	1.0676	1.0739	0.9364	0.9523	0.9773
3.600	1.0677	1.0724	0.9387	0.9544	0.9794
3.800	1.0677	1.0711	0.9407	0.9562	0.9812
4.000	1.0677	1.0700	0.9424	0.9578	0.9828
4.500	1.0681	1.0679	0.9462	0.9611	0.9865
5.000	1.0688	1.0665	0.9493	0.9636	0.9896
5.500	1.0696	1.0655	0.9518	0.9656	0.9923
6.000	1.0703	1.0647	0.9538	0.9671	0.9945
6.500	1.0710	1.0640	0.9555	0.9684	0.9963
7.000	1.0716	1.0635	0.9568	0.9695	0.9979

TABLE 7b. Ratios of collision integrals for the (21,6) potential function (Continued)

T^*	A^*	B^*	C^*	E^*	F^*
7.500	1.0722	1.0631	0.9580	0.9704	0.9992
8.000	1.0727	1.0628	0.9589	0.9711	1.0004
8.500	1.0732	1.0625	0.9598	0.9717	1.0015
9.000	1.0737	1.0623	0.9605	0.9723	1.0024
9.500	1.0741	1.0621	0.9611	0.9727	1.0032
10.000	1.0745	1.0619	0.9616	0.9731	1.0039
11.000	1.0752	1.0616	0.9625	0.9738	1.0052
12.000	1.0759	1.0614	0.9633	0.9743	1.0063
13.000	1.0765	1.0612	0.9639	0.9747	1.0072
14.000	1.0771	1.0611	0.9644	0.9750	1.0080
15.000	1.0776	1.0610	0.9648	0.9752	1.0087
16.000	1.0780	1.0609	0.9652	0.9754	1.0093
17.000	1.0784	1.0609	0.9655	0.9756	1.0098
18.000	1.0788	1.0608	0.9657	0.9758	1.0103
19.000	1.0791	1.0608	0.9659	0.9759	1.0107
20.000	1.0795	1.0608	0.9661	0.9760	1.0110
22.000	1.0800	1.0607	0.9665	0.9761	1.0117
24.000	1.0805	1.0606	0.9667	0.9763	1.0122
26.000	1.0809	1.0606	0.9669	0.9764	1.0127
28.000	1.0813	1.0606	0.9671	0.9764	1.0130
30.000	1.0816	1.0606	0.9672	0.9765	1.0134
32.000	1.0819	1.0605	0.9673	0.9765	1.0137
34.000	1.0822	1.0605	0.9674	0.9766	1.0139
36.000	1.0824	1.0605	0.9675	0.9766	1.0142
38.000	1.0827	1.0605	0.9676	0.9766	1.0144
40.000	1.0829	1.0605	0.9676	0.9766	1.0146
45.000	1.0833	1.0604	0.9678	0.9767	1.0150
50.000	1.0837	1.0604	0.9679	0.9767	1.0153
55.000	1.0840	1.0604	0.9679	0.9767	1.0156
60.000	1.0843	1.0604	0.9680	0.9767	1.0158
65.000	1.0845	1.0604	0.9680	0.9767	1.0160
70.000	1.0847	1.0604	0.9681	0.9767	1.0162
75.000	1.0849	1.0604	0.9681	0.9767	1.0163
80.000	1.0851	1.0604	0.9681	0.9767	1.0165
85.000	1.0852	1.0604	0.9681	0.9767	1.0166
90.000	1.0854	1.0604	0.9682	0.9767	1.0167
95.000	1.0855	1.0604	0.9682	0.9766	1.0168
100.000	1.0856	1.0604	0.9682	0.9766	1.0169
125.000	1.0861	1.0604	0.9682	0.9766	1.0172
150.000	1.0864	1.0604	0.9683	0.9766	1.0175
175.000	1.0866	1.0604	0.9683	0.9765	1.0176
200.000	1.0868	1.0604	0.9683	0.9765	1.0178

TABLE 7c. Tables of additional functions of the collision integrals for the (21,6) potential function

	Higher order corrections			Isotopic thermal diffusion ratios		
T^*	f_η	f_λ	$f_{\mathcal{D}\theta}$	c.c.$_1$	Kihara$_1$	Kihara$_2$
.100	1.0018	1.0028	1.0019	.289	.292	.294
.150	1.0019	1.0030	1.0018	.283	.286	.289
.200	1.0020	1.0031	1.0016	.269	.272	.276
.250	1.0020	1.0031	1.0014	.247	.248	.254
.300	1.0018	1.0028	1.0011	.220	.221	.227
.350	1.0015	1.0023	1.0009	.194	.195	.200
.400	1.0011	1.0018	1.0007	.171	.171	.176
.450	1.0009	1.0013	1.0006	.153	.153	.157
.500	1.0006	1.0010	1.0005	.140	.140	.142
.550	1.0005	1.0008	1.0004	.132	.132	.134
.600	1.0004	1.0006	1.0004	.128	.129	.130
.650	1.0003	1.0005	1.0004	.127	.128	.128
.700	1.0003	1.0005	1.0004	.129	.130	.130
.750	1.0003	1.0004	1.0004	.134	.136	.135
.800	1.0003	1.0004	1.0005	.142	.144	.142
.850	1.0003	1.0004	1.0006	.151	.153	.151
.900	1.0003	1.0005	1.0006	.159	.161	.159
.950	1.0003	1.0005	1.0007	.168	.171	.168
1.000	1.0004	1.0006	1.0008	.179	.182	.179
1.100	1.0005	1.0008	1.0010	.203	.207	.202
1.200	1.0007	1.0010	1.0013	.227	.232	.227
1.300	1.0009	1.0013	1.0015	.249	.255	.249
1.400	1.0011	1.0017	1.0018	.270	.277	.270
1.500	1.0014	1.0021	1.0021	.292	.299	.292
1.600	1.0016	1.0025	1.0024	.313	.322	.314
1.700	1.0019	1.0029	1.0027	.333	.343	.334
1.800	1.0022	1.0034	1.0030	.352	.362	.354
1.900	1.0024	1.0038	1.0033	.369	.380	.371
2.000	1.0027	1.0042	1.0036	.385	.397	.388
2.200	1.0033	1.0051	1.0041	.412	.425	.416
2.400	1.0038	1.0059	1.0046	.436	.451	.443
2.600	1.0043	1.0067	1.0051	.458	.475	.467
2.800	1.0047	1.0074	1.0056	.478	.495	.488
3.000	1.0051	1.0080	1.0060	.495	.513	.507
3.200	1.0055	1.0086	1.0064	.510	.529	.523
3.400	1.0059	1.0091	1.0067	.524	.543	.538
3.600	1.0062	1.0096	1.0070	.535	.555	.551
3.800	1.0065	1.0100	1.0073	.545	.565	.562
4.000	1.0067	1.0104	1.0075	.554	.575	.572
4.500	1.0073	1.0113	1.0080	.572	.594	.593
5.000	1.0077	1.0120	1.0085	.588	.610	.610
5.500	1.0080	1.0125	1.0088	.600	.623	.624
6.000	1.0083	1.0129	1.0091	.609	.633	.635
6.500	1.0085	1.0133	1.0094	.617	.641	.644
7.000	1.0087	1.0136	1.0096	.624	.648	.652

TABLE 7c. Tables of additional functions of the collision integrals for the (21,6) potential function (Cont'd)

	Higher order corrections			Isotopic thermal diffusion ratios		
T^*	f_η	f_λ	$f_{\mathscr{D}\Theta}$	c.c.$_1$	Kihara$_1$	Kihara$_2$
7.500	1.0089	1.0139	1.0098	.629	.654	.658
8.000	1.0090	1.0141	1.0099	.634	.659	.664
8.500	1.0092	1.0143	1.0101	.638	.663	.668
9.000	1.0093	1.0144	1.0102	.641	.666	.672
9.500	1.0094	1.0146	1.0103	.644	.669	.675
10.000	1.0094	1.0147	1.0104	.646	.672	.678
11.000	1.0096	1.0149	1.0105	.650	.676	.683
12.000	1.0097	1.0150	1.0106	.654	.679	.687
13.000	1.0097	1.0151	1.0107	.656	.682	.690
14.000	1.0098	1.0152	1.0108	.658	.684	.693
15.000	1.0098	1.0153	1.0109	.660	.686	.695
16.000	1.0099	1.0154	1.0109	.662	.688	.697
17.000	1.0099	1.0154	1.0110	.663	.689	.698
18.000	1.0099	1.0155	1.0110	.664	.690	.699
19.000	1.0100	1.0155	1.0111	.665	.691	.700
20.000	1.0100	1.0155	1.0111	.666	.692	.701
22.000	1.0100	1.0156	1.0111	.667	.693	.703
24.000	1.0100	1.0156	1.0112	.668	.694	.704
26.000	1.0101	1.0157	1.0112	.669	.695	.705
28.000	1.0101	1.0157	1.0112	.669	.696	.706
30.000	1.0101	1.0157	1.0113	.670	.696	.706
32.000	1.0101	1.0157	1.0113	.670	.697	.707
34.000	1.0101	1.0157	1.0113	.670	.697	.707
36.000	1.0101	1.0157	1.0113	.671	.697	.707
38.000	1.0101	1.0157	1.0113	.671	.697	.707
40.000	1.0101	1.0157	1.0113	.671	.698	.708
45.000	1.0101	1.0157	1.0113	.671	.698	.708
50.000	1.0101	1.0158	1.0114	.672	.698	.708
55.000	1.0101	1.0158	1.0114	.672	.698	.709
60.000	1.0101	1.0158	1.0114	.672	.699	.709
65.000	1.0101	1.0158	1.0114	.672	.699	.709
70.000	1.0101	1.0158	1.0114	.672	.699	.709
75.000	1.0101	1.0158	1.0114	.672	.699	.709
80.000	1.0101	1.0158	1.0114	.672	.699	.709
85.000	1.0101	1.0157	1.0114	.672	.699	.709
90.000	1.0101	1.0157	1.0114	.672	.699	.709
95.000	1.0101	1.0157	1.0114	.672	.699	.709
100.000	1.0101	1.0157	1.0114	.672	.699	.709
125.000	1.0101	1.0157	1.0114	.672	.699	.709
150.000	1.0101	1.0157	1.0114	.672	.699	.709
175.000	1.0101	1.0157	1.0114	.672	.698	.709
200.000	1.0101	1.0157	1.0114	.672	.698	.709

TABLE 8a. Collision integrals for the (24,6) potential function

T^*	$\Omega^{(1,1)*}$	$\Omega^{(2,2)*}$	$\Omega^{(1,2)*}$	$\Omega^{(1,3)*}$	$\Omega^{(2,3)*}$	$\Omega^{(3,3)*}$
.100	3.1968	3.3499	2.8378	2.5987	3.0761	3.0123
.150	2.7882	2.9360	2.4739	2.2628	2.6988	2.6249
.200	2.5283	2.6773	2.2392	2.0412	2.4641	2.3744
.250	2.3397	2.4933	2.0649	1.8725	2.2945	2.1903
.300	2.1919	2.3510	1.9260	1.7374	2.1595	2.0449
.350	2.0709	2.2344	1.8115	1.6272	2.0455	1.9255
.400	1.9677	2.1348	1.7140	1.5356	1.9460	1.8250
.450	1.8796	2.0440	1.6321	1.4603	1.8558	1.7415
.500	1.8014	1.9664	1.5604	1.3965	1.7780	1.6666
.550	1.7346	1.8944	1.5003	1.3438	1.7077	1.6036
.600	1.6738	1.8288	1.4469	1.2985	1.6445	1.5476
.650	1.6192	1.7717	1.4000	1.2596	1.5898	1.4977
.700	1.5723	1.7181	1.3600	1.2266	1.5399	1.4536
.750	1.5297	1.6683	1.3245	1.1979	1.4951	1.4153
.800	1.4902	1.6245	1.2925	1.1727	1.4556	1.3803
.850	1.4541	1.5847	1.2638	1.1503	1.4202	1.3485
.900	1.4217	1.5480	1.2383	1.1305	1.3882	1.3200
.950	1.3933	1.5140	1.2159	1.1131	1.3593	1.2945
1.000	1.3671	1.4824	1.1956	1.0975	1.3330	1.2714
1.100	1.3195	1.4266	1.1598	1.0704	1.2871	1.2307
1.200	1.2786	1.3803	1.1298	1.0480	1.2494	1.1964
1.300	1.2437	1.3401	1.1045	1.0292	1.2175	1.1674
1.400	1.2143	1.3049	1.0832	1.0132	1.1902	1.1427
1.500	1.1883	1.2736	1.0646	.9993	1.1665	1.1211
1.600	1.1651	1.2468	1.0484	.9871	1.1461	1.1023
1.700	1.1442	1.2232	1.0339	.9764	1.1282	1.0857
1.800	1.1255	1.2023	1.0211	.9668	1.1125	1.0709
1.900	1.1088	1.1835	1.0096	.9581	1.0984	1.0578
2.000	1.0937	1.1664	.9992	.9503	1.0858	1.0459
2.200	1.0681	1.1372	.9814	.9366	1.0642	1.0256
2.400	1.0468	1.1127	.9665	.9251	1.0462	1.0086
2.600	1.0282	1.0923	.9537	.9150	1.0311	.9942
2.800	1.0121	1.0749	.9426	.9062	1.0182	.9819
3.000	.9980	1.0598	.9328	.8984	1.0069	.9710
3.200	.9857	1.0466	.9241	.8914	.9969	.9615
3.400	.9747	1.0350	.9164	.8850	.9882	.9530
3.600	.9649	1.0246	.9094	.8792	.9802	.9454
3.800	.9561	1.0152	.9029	.8739	.9731	.9384
4.000	.9481	1.0067	.8971	.8690	.9665	.9321
4.500	.9311	.9888	.8843	.8581	.9525	.9186
5.000	.9169	.9741	.8736	.8488	.9408	.9072
5.500	.9049	.9619	.8643	.8407	.9309	.8976
6.000	.8945	.9514	.8563	.8335	.9223	.8892
6.500	.8855	.9423	.8491	.8271	.9147	.8819
7.000	.8776	.9343	.8427	.8213	.9079	.8753

TABLE 8a. Collision integrals for the (24,6) potential function (Cont'd)

T^*	$\Omega^{(1,1)*}$	$\Omega^{(2,2)*}$	$\Omega^{(1,2)*}$	$\Omega^{(1,3)*}$	$\Omega^{(2,3)*}$	$\Omega^{(3,3)*}$
7.500	.8705	.9272	.8368	.8159	.9017	.8693
8.000	.8641	.9207	.8315	.8111	.8961	.8639
8.500	.8582	.9149	.8266	.8065	.8910	.8589
9.000	.8529	.9095	.8220	.8023	.8863	.8543
9.500	.8479	.9045	.8178	.7984	.8819	.8500
10.000	.8434	.8999	.8139	.7947	.8777	.8460
11.000	.8351	.8916	.8067	.7879	.8702	.8388
12.000	.8278	.8843	.8002	.7819	.8635	.8323
13.000	.8213	.8777	.7944	.7764	.8575	.8264
14.000	.8154	.8718	.7891	.7713	.8520	.8211
15.000	.8100	.8664	.7842	.7667	.8469	.8162
16.000	.8050	.8614	.7797	.7624	.8423	.8117
17.000	.8005	.8568	.7756	.7584	.8379	.8075
18.000	.7962	.8525	.7717	.7547	.8339	.8035
19.000	.7923	.8485	.7680	.7512	.8301	.7999
20.000	.7886	.8447	.7646	.7479	.8265	.7964
22.000	.7818	.8378	.7583	.7418	.8199	.7900
24.000	.7757	.8316	.7526	.7363	.8139	.7842
26.000	.7702	.8260	.7474	.7313	.8085	.7790
28.000	.7651	.8209	.7426	.7267	.8035	.7742
30.000	.7605	.8161	.7383	.7224	.7989	.7698
32.000	.7562	.8117	.7342	.7185	.7947	.7656
34.000	.7522	.8076	.7304	.7148	.7907	.7618
36.000	.7485	.8037	.7269	.7114	.7869	.7582
38.000	.7450	.8001	.7235	.7081	.7834	.7548
40.000	.7417	.7967	.7204	.7051	.7801	.7516
45.000	.7342	.7889	.7132	.6981	.7725	.7442
50.000	.7276	.7821	.7069	.6919	.7658	.7378
55.000	.7217	.7759	.7012	.6864	.7598	.7320
60.000	.7164	.7703	.6961	.6814	.7544	.7267
65.000	.7115	.7653	.6914	.6768	.7494	.7219
70.000	.7071	.7606	.6871	.6727	.7449	.7175
75.000	.7030	.7563	.6831	.6688	.7406	.7135
80.000	.6991	.7523	.6794	.6652	.7367	.7097
85.000	.6956	.7485	.6760	.6618	.7330	.7061
90.000	.6922	.7450	.6728	.6586	.7296	.7028
95.000	.6891	.7417	.6697	.6557	.7263	.6997
100.000	.6861	.7385	.6668	.6529	.7233	.6967
125.000	.6734	.7250	.6545	.6408	.7101	.6840
150.000	.6631	.7142	.6446	.6311	.6994	.6737
175.000	.6546	.7052	.6363	.6230	.6906	.6652
200.000	.6473	.6974	.6293	.6161	.6830	.6579

TABLE 8b. Ratios of collision integrals for the (24,6) potential function

T^*	A^*	B^*	C^*	E^*	F^*
0.100	1.0479	1.1869	0.8877	0.9183	0.9423
0.150	1.0530	1.1901	0.8873	0.9192	0.9414
0.200	1.0589	1.1990	0.8857	0.9204	0.9391
0.250	1.0656	1.2115	0.8826	0.9203	0.9362
0.300	1.0726	1.2228	0.8787	0.9185	0.9329
0.350	1.0790	1.2306	0.8747	0.9154	0.9298
0.400	1.0849	1.2339	0.8711	0.9116	0.9275
0.450	1.0875	1.2337	0.8683	0.9079	0.9265
0.500	1.0916	1.2302	0.8662	0.9042	0.9252
0.550	1.0921	1.2256	0.8649	0.9014	0.9245
0.600	1.0926	1.2189	0.8644	0.8992	0.9246
0.650	1.0942	1.2112	0.8646	0.8973	0.9249
0.700	1.0927	1.2042	0.8649	0.8963	0.9245
0.750	1.0906	1.1968	0.8659	0.8962	0.9253
0.800	1.0901	1.1891	0.8674	0.8961	0.9263
0.850	1.0898	1.1814	0.8691	0.8962	0.9273
0.900	1.0888	1.1742	0.8710	0.8968	0.9284
0.950	1.0867	1.1677	0.8727	0.8978	0.9291
1.000	1.0843	1.1615	0.8746	0.8992	0.9300
1.100	1.0812	1.1499	0.8790	0.9023	0.9327
1.200	1.0795	1.1395	0.8836	0.9052	0.9358
1.300	1.0775	1.1305	0.8881	0.9085	0.9387
1.400	1.0746	1.1227	0.8920	0.9121	0.9410
1.500	1.0718	1.1158	0.8959	0.9159	0.9434
1.600	1.0701	1.1100	0.8998	0.9192	0.9461
1.700	1.0690	1.1048	0.9036	0.9223	0.9488
1.800	1.0682	1.1002	0.9072	0.9253	0.9515
1.900	1.0674	1.0962	0.9105	0.9281	0.9540
2.000	1.0665	1.0926	0.9136	0.9309	0.9563
2.200	1.0646	1.0866	0.9188	0.9358	0.9602
2.400	1.0630	1.0818	0.9233	0.9402	0.9636
2.600	1.0623	1.0780	0.9275	0.9440	0.9670
2.800	1.0621	1.0750	0.9313	0.9472	0.9701
3.000	1.0619	1.0725	0.9347	0.9501	0.9729
3.200	1.0618	1.0705	0.9376	0.9526	0.9754
3.400	1.0618	1.0688	0.9402	0.9548	0.9777
3.600	1.0618	1.0673	0.9424	0.9567	0.9797
3.800	1.0618	1.0659	0.9444	0.9585	0.9816
4.000	1.0618	1.0648	0.9462	0.9601	0.9831
4.500	1.0619	1.0626	0.9498	0.9633	0.9865
5.000	1.0624	1.0610	0.9528	0.9658	0.9895
5.500	1.0630	1.0599	0.9552	0.9678	0.9920
6.000	1.0636	1.0591	0.9572	0.9693	0.9941
6.500	1.0641	1.0584	0.9588	0.9706	0.9958
7.000	1.0646	1.0578	0.9602	0.9717	0.9973

TABLE 8b. Ratios of collision integrals for the $(2\dot{4},6)$ potential function (Continued)

T^*	A^*	B^*	C^*	E^*	F^*
7.500	1.0651	1.0573	0.9613	0.9726	0.9986
8.000	1.0655	1.0570	0.9623	0.9733	0.9998
8.500	1.0660	1.0566	0.9631	0.9739	1.0008
9.000	1.0664	1.0563	0.9639	0.9745	1.0017
9.500	1.0667	1.0561	0.9645	0.9749	1.0025
10.000	1.0671	1.0559	0.9650	0.9753	1.0032
11.000	1.0677	1.0555	0.9659	0.9760	1.0044
12.000	1.0682	1.0553	0.9667	0.9765	1.0054
13.000	1.0687	1.0551	0.9673	0.9769	1.0063
14.000	1.0692	1.0549	0.9678	0.9773	1.0070
15.000	1.0696	1.0548	0.9682	0.9775	1.0077
16.000	1.0700	1.0546	0.9686	0.9778	1.0082
17.000	1.0704	1.0545	0.9689	0.9780	1.0087
18.000	1.0707	1.0545	0.9692	0.9781	1.0092
19.000	1.0710	1.0544	0.9694	0.9782	1.0096
20.000	1.0713	1.0543	0.9696	0.9784	1.0099
22.000	1.0717	1.0542	0.9699	0.9786	1.0105
24.000	1.0722	1.0541	0.9702	0.9787	1.0111
26.000	1.0725	1.0541	0.9704	0.9788	1.0115
28.000	1.0728	1.0540	0.9706	0.9789	1.0118
30.000	1.0731	1.0539	0.9708	0.9790	1.0122
32.000	1.0734	1.0539	0.9709	0.9790	1.0124
34.000	1.0736	1.0539	0.9710	0.9791	1.0127
36.000	1.0738	1.0538	0.9711	0.9791	1.0129
38.000	1.0740	1.0538	0.9712	0.9791	1.0131
40.000	1.0741	1.0538	0.9712	0.9792	1.0133
45.000	1.0745	1.0537	0.9714	0.9792	1.0136
50.000	1.0748	1.0537	0.9715	0.9793	1.0140
55.000	1.0751	1.0536	0.9716	0.9793	1.0142
60.000	1.0753	1.0536	0.9716	0.9793	1.0144
65.000	1.0755	1.0536	0.9717	0.9793	1.0146
70.000	1.0757	1.0535	0.9717	0.9793	1.0148
75.000	1.0758	1.0535	0.9718	0.9793	1.0149
80.000	1.0760	1.0535	0.9718	0.9793	1.0150
85.000	1.0761	1.0535	0.9719	0.9793	1.0151
90.000	1.0762	1.0535	0.9719	0.9793	1.0153
95.000	1.0763	1.0535	0.9719	0.9793	1.0153
100.000	1.0764	1.0535	0.9719	0.9793	1.0154
125.000	1.0768	1.0534	0.9720	0.9793	1.0157
150.000	1.0770	1.0534	0.9720	0.9793	1.0160
175.000	1.0772	1.0534	0.9721	0.9793	1.0161
200.000	1.0774	1.0534	0.9721	0.9793	1.0163

TABLE 8c. Tables of additional functions of the collision integrals for the $^{(24,6)}$ potential function

	Higher order corrections			Isotopic thermal diffusion ratios		
T^*	f_η	f_λ	$f_{\mathscr{D}}$	c.c.$_1$	Kihara$_1$	Kihara$_2$
.100	1.0018	1.0029	1.0019	.288	.292	.294
.150	1.0019	1.0030	1.0018	.285	.288	.290
.200	1.0020	1.0031	1.0017	.275	.278	.281
.250	1.0020	1.0031	1.0015	.258	.260	.265
.300	1.0019	1.0029	1.0013	.237	.238	.243
.350	1.0016	1.0025	1.0011	.215	.216	.221
.400	1.0013	1.0020	1.0009	.195	.196	.200
.450	1.0011	1.0017	1.0008	.180	.181	.184
.500	1.0008	1.0013	1.0007	.169	.169	.172
.550	1.0007	1.0011	1.0006	.162	.163	.164
.600	1.0006	1.0009	1.0006	.159	.160	.161
.650	1.0005	1.0008	1.0006	.159	.161	.161
.700	1.0004	1.0007	1.0006	.161	.163	.162
.750	1.0004	1.0007	1.0007	.166	.168	.167
.800	1.0004	1.0007	1.0007	.173	.176	.174
.850	1.0004	1.0007	1.0008	.182	.185	.183
.900	1.0005	1.0007	1.0009	.191	.194	.192
.950	1.0005	1.0008	1.0010	.200	.204	.200
1.000	1.0006	1.0009	1.0011	.210	.214	.210
1.100	1.0007	1.0011	1.0013	.232	.237	.233
1.200	1.0009	1.0014	1.0016	.256	.262	.256
1.300	1.0011	1.0017	1.0019	.279	.286	.280
1.400	1.0014	1.0021	1.0022	.299	.307	.300
1.500	1.0016	1.0025	1.0025	.319	.328	.320
1.600	1.0019	1.0030	1.0028	.339	.349	.341
1.700	1.0022	1.0034	1.0031	.359	.370	.361
1.800	1.0025	1.0039	1.0034	.377	.389	.380
1.900	1.0028	1.0043	1.0038	.394	.407	.398
2.000	1.0031	1.0048	1.0041	.410	.423	.414
2.200	1.0036	1.0056	1.0046	.437	.452	.443
2.400	1.0042	1.0065	1.0051	.460	.476	.468
2.600	1.0047	1.0073	1.0056	.481	.499	.491
2.800	1.0051	1.0079	1.0061	.500	.519	.512
3.000	1.0055	1.0086	1.0065	.517	.537	.530
3.200	1.0059	1.0092	1.0069	.532	.552	.547
3.400	1.0062	1.0097	1.0072	.545	.566	.561
3.600	1.0065	1.0102	1.0075	.556	.578	.574
3.800	1.0068	1.0106	1.0078	.567	.589	.585
4.000	1.0071	1.0110	1.0080	.575	.598	.595
4.500	1.0076	1.0119	1.0086	.593	.617	.615
5.000	1.0081	1.0126	1.0090	.608	.632	.632
5.500	1.0084	1.0131	1.0094	.620	.645	.646
6.000	1.0087	1.0136	1.0097	.630	.655	.658
6.500	1.0090	1.0139	1.0099	.638	.663	.667
7.000	1.0092	1.0142	1.0102	.644	.670	.674

TABLE 8c. Tables of additional functions of the collision integrals for the (24,6) potential function (Cont'd)

	Higher order corrections			Isotopic thermal diffusion ratios		
T^*	f_η	f_λ	$f_{\mathscr{D}}$	c.c.$_1$	Kihara$_1$	Kihara$_2$
7.500	1.0093	1.0145	1.0103	.650	.676	.681
8.000	1.0095	1.0147	1.0105	.654	.681	.686
8.500	1.0096	1.0149	1.0106	.658	.685	.691
9.000	1.0097	1.0151	1.0107	.662	.688	.695
9.500	1.0098	1.0152	1.0108	.664	.692	.698
10.000	1.0099	1.0153	1.0109	.667	.694	.701
11.000	1.0100	1.0155	1.0111	.671	.699	.706
12.000	1.0101	1.0157	1.0112	.674	.702	.710
13.000	1.0102	1.0158	1.0113	.677	.705	.713
14.000	1.0102	1.0159	1.0114	.679	.707	.716
15.000	1.0103	1.0160	1.0115	.681	.709	.718
16.000	1.0103	1.0161	1.0115	.683	.711	.720
17.000	1.0104	1.0162	1.0116	.684	.712	.722
18.000	1.0104	1.0162	1.0116	.685	.714	.723
19.000	1.0104	1.0162	1.0117	.686	.715	.724
20.000	1.0105	1.0163	1.0117	.687	.715	.725
22.000	1.0105	1.0163	1.0118	.689	.717	.727
24.000	1.0105	1.0164	1.0118	.690	.718	.728
26.000	1.0106	1.0164	1.0118	.691	.719	.729
28.000	1.0106	1.0165	1.0119	.691	.720	.730
30.000	1.0106	1.0165	1.0119	.692	.720	.731
32.000	1.0106	1.0165	1.0119	.692	.721	.731
34.000	1.0106	1.0165	1.0119	.693	.721	.732
36.000	1.0106	1.0165	1.0119	.693	.722	.732
38.000	1.0106	1.0165	1.0120	.693	.722	.732
40.000	1.0106	1.0165	1.0120	.694	.722	.733
45.000	1.0106	1.0166	1.0120	.694	.723	.733
50.000	1.0106	1.0166	1.0120	.694	.723	.734
55.000	1.0107	1.0166	1.0120	.695	.723	.734
60.000	1.0107	1.0166	1.0120	.695	.724	.734
65.000	1.0107	1.0166	1.0120	.695	.724	.734
70.000	1.0107	1.0166	1.0121	.695	.724	.735
75.000	1.0107	1.0166	1.0121	.695	.724	.735
80.000	1.0107	1.0166	1.0121	.695	.724	.735
85.000	1.0107	1.0166	1.0121	.695	.724	.735
90.000	1.0107	1.0166	1.0121	.695	.724	.735
95.000	1.0107	1.0166	1.0121	.696	.724	.735
100.000	1.0107	1.0166	1.0121	.696	.724	.735
125.000	1.0107	1.0166	1.0121	.696	.724	.735
150.000	1.0107	1.0166	1.0121	.696	.724	.735
175.000	1.0107	1.0166	1.0121	.696	.724	.735
200.000	1.0107	1.0166	1.0121	.696	.724	.735

TABLE 9a. Collision integrals for the (30,6) potential function

T^*	$\Omega^{(1,1)*}$	$\Omega^{(2,2)*}$	$\Omega^{(1,2)*}$	$\Omega^{(1,3)*}$	$\Omega^{(2,3)*}$	$\Omega^{(3,3)*}$
.100	3.0631	3.2201	2.7198	2.4914	2.9574	2.8871
.150	2.6728	2.8226	2.3733	2.1732	2.5946	2.5180
.200	2.4258	2.5735	2.1520	1.9666	2.3682	2.2819
.250	2.2482	2.3977	1.9904	1.8127	2.2075	2.1097
.300	2.1101	2.2624	1.8627	1.6901	2.0808	1.9750
.350	1.9973	2.1518	1.7574	1.5895	1.9744	1.8650
.400	1.9023	2.0567	1.6690	1.5066	1.8813	1.7740
.450	1.8215	1.9756	1.5943	1.4379	1.8012	1.6956
.500	1.7502	1.9010	1.5295	1.3799	1.7280	1.6286
.550	1.6879	1.8368	1.4736	1.3310	1.6650	1.5695
.600	1.6335	1.7763	1.4256	1.2897	1.6072	1.5185
.650	1.5839	1.7226	1.3829	1.2540	1.5562	1.4731
.700	1.5391	1.6742	1.3450	1.2228	1.5108	1.4318
.750	1.5006	1.6299	1.3128	1.1964	1.4703	1.3962
.800	1.4653	1.5885	1.2838	1.1731	1.4333	1.3643
.850	1.4325	1.5511	1.2575	1.1524	1.4002	1.3351
.900	1.4024	1.5175	1.2337	1.1340	1.3706	1.3084
.950	1.3752	1.4867	1.2125	1.1176	1.3439	1.2845
1.000	1.3510	1.4579	1.1936	1.1029	1.3195	1.2630
1.100	1.3082	1.4060	1.1609	1.0779	1.2767	1.2253
1.200	1.2707	1.3624	1.1331	1.0570	1.2412	1.1933
1.300	1.2383	1.3253	1.1096	1.0394	1.2113	1.1662
1.400	1.2103	1.2928	1.0895	1.0245	1.1858	1.1429
1.500	1.1864	1.2638	1.0722	1.0116	1.1636	1.1227
1.600	1.1653	1.2385	1.0572	1.0003	1.1444	1.1052
1.700	1.1462	1.2163	1.0439	.9904	1.1276	1.0897
1.800	1.1290	1.1968	1.0320	.9815	1.1129	1.0760
1.900	1.1135	1.1793	1.0213	.9736	1.0998	1.0638
2.000	1.0994	1.1634	1.0117	.9664	1.0881	1.0528
2.200	1.0753	1.1361	.9952	.9539	1.0680	1.0340
2.400	1.0555	1.1135	.9814	.9433	1.0515	1.0184
2.600	1.0386	1.0943	.9697	.9342	1.0375	1.0051
2.800	1.0238	1.0781	.9595	.9263	1.0256	.9938
3.000	1.0108	1.0642	.9506	.9193	1.0153	.9839
3.200	.9994	1.0520	.9427	.9130	1.0062	.9752
3.400	.9893	1.0413	.9357	.9073	.9982	.9675
3.600	.9803	1.0317	.9293	.9021	.9910	.9606
3.800	.9722	1.0232	.9235	.8973	.9845	.9544
4.000	.9648	1.0154	.9182	.8929	.9786	.9487
4.500	.9493	.9990	.9068	.8832	.9659	.9365
5.000	.9365	.9857	.8972	.8750	.9555	.9264
5.500	.9256	.9746	.8889	.8679	.9466	.9177
6.000	.9163	.9651	.8818	.8616	.9389	.9103
6.500	.9082	.9570	.8754	.8559	.9321	.9038
7.000	.9010	.9498	.8697	.8508	.9261	.8979

TABLE 9a. Collision integrals for the (30,6) potential function (Cont'd)

T^*	$\Omega^{(1,1)*}$	$\Omega^{(2,2)*}$	$\Omega^{(1,2)*}$	$\Omega^{(1,3)*}$	$\Omega^{(2,3)*}$	$\Omega^{(3,3)*}$
7.500	.8947	.9434	.8646	.8462	.9207	.8927
8.000	.8889	.9376	.8599	.8419	.9157	.8879
8.500	.8837	.9324	.8556	.8380	.9112	.8835
9.000	.8790	.9277	.8516	.8343	.9071	.8795
9.500	.8746	.9233	.8479	.8309	.9032	.8757
10.000	.8705	.9192	.8444	.8277	.8996	.8722
11.000	.8632	.9119	.8381	.8218	.8930	.8659
12.000	.8568	.9054	.8325	.8165	.8872	.8602
13.000	.8511	.8997	.8274	.8117	.8820	.8551
14.000	.8459	.8945	.8228	.8074	.8772	.8505
15.000	.8411	.8898	.8186	.8034	.8728	.8462
16.000	.8368	.8854	.8147	.7997	.8688	.8423
17.000	.8328	.8814	.8111	.7962	.8650	.8387
18.000	.8291	.8777	.8077	.7930	.8615	.8353
19.000	.8257	.8742	.8045	.7900	.8582	.8321
20.000	.8224	.8710	.8016	.7871	.8551	.8291
22.000	.8165	.8650	.7961	.7818	.8495	.8236
24.000	.8112	.8596	.7912	.7771	.8444	.8186
26.000	.8065	.8548	.7867	.7728	.8397	.8141
28.000	.8021	.8503	.7826	.7688	.8354	.8100
30.000	.7981	.8462	.7788	.7651	.8315	.8062
32.000	.7944	.8425	.7753	.7617	.8278	.8026
34.000	.7909	.8389	.7720	.7586	.8244	.7993
36.000	.7877	.8356	.7690	.7556	.8212	.7962
38.000	.7847	.8325	.7661	.7528	.8182	.7933
40.000	.7818	.8296	.7634	.7501	.8153	.7905
45.000	.7753	.8229	.7572	.7441	.8089	.7842
50.000	.7696	.8170	.7517	.7388	.8031	.7787
55.000	.7645	.8118	.7468	.7340	.7980	.7737
60.000	.7599	.8070	.7424	.7297	.7934	.7692
65.000	.7557	.8027	.7383	.7257	.7891	.7651
70.000	.7519	.7987	.7346	.7221	.7852	.7613
75.000	.7483	.7950	.7312	.7187	.7816	.7578
80.000	.7450	.7915	.7280	.7156	.7782	.7545
85.000	.7419	.7883	.7250	.7127	.7751	.7515
90.000	.7390	.7853	.7222	.7099	.7721	.7486
95.000	.7363	.7825	.7195	.7073	.7693	.7459
100.000	.7337	.7798	.7170	.7049	.7667	.7433
125.000	.7227	.7682	.7063	.6944	.7554	.7323
150.000	.7138	.7589	.6977	.6859	.7462	.7235
175.000	.7064	.7512	.6905	.6789	.7386	.7161
200.000	.7001	.7445	.6843	.6728	.7321	.7097

TABLE 9b. Ratios of collision integrals for the (30,6) potential function

T^*	A^*	B^*	C^*	E^*	F^*
0.100	1.0513	1.1861	0.8879	0.9184	0.9426
0.150	1.0560	1.1874	0.8879	0.9192	0.9421
0.200	1.0609	1.1929	0.8871	0.9202	0.9407
0.250	1.0665	1.2014	0.8853	0.9207	0.9384
0.300	1.0721	1.2101	0.8827	0.9197	0.9360
0.350	1.0774	1.2162	0.8799	0.9175	0.9337
0.400	1.0811	1.2188	0.8773	0.9147	0.9325
0.450	1.0846	1.2188	0.8753	0.9117	0.9309
0.500	1.0861	1.2158	0.8739	0.9090	0.9305
0.550	1.0882	1.2111	0.8730	0.9065	0.9298
0.600	1.0874	1.2057	0.8727	0.9048	0.9296
0.650	1.0876	1.1989	0.8731	0.9034	0.9300
0.700	1.0878	1.1915	0.8739	0.9024	0.9303
0.750	1.0861	1.1849	0.8748	0.9021	0.9304
0.800	1.0841	1.1782	0.8761	0.9023	0.9311
0.850	1.0828	1.1712	0.8778	0.9027	0.9320
0.900	1.0821	1.1643	0.8797	0.9032	0.9330
0.950	1.0811	1.1578	0.8817	0.9040	0.9341
1.000	1.0792	1.1519	0.8835	0.9051	0.9349
1.100	1.0748	1.1411	0.8874	0.9080	0.9366
1.200	1.0722	1.1313	0.8917	0.9110	0.9391
1.300	1.0703	1.1226	0.8961	0.9140	0.9418
1.400	1.0681	1.1150	0.9002	0.9172	0.9443
1.500	1.0653	1.1082	0.9038	0.9207	0.9464
1.600	1.0629	1.1024	0.9072	0.9240	0.9485
1.700	1.0611	1.0973	0.9107	0.9271	0.9507
1.800	1.0600	1.0928	0.9141	0.9299	0.9531
1.900	1.0591	1.0888	0.9173	0.9326	0.9554
2.000	1.0582	1.0851	0.9203	0.9353	0.9577
2.200	1.0566	1.0791	0.9255	0.9401	0.9616
2.400	1.0549	1.0742	0.9298	0.9443	0.9648
2.600	1.0537	1.0703	0.9337	0.9481	0.9678
2.800	1.0531	1.0671	0.9372	0.9513	0.9707
3.000	1.0528	1.0646	0.9405	0.9541	0.9734
3.200	1.0526	1.0625	0.9433	0.9565	0.9758
3.400	1.0525	1.0607	0.9458	0.9586	0.9780
3.600	1.0525	1.0592	0.9480	0.9605	0.9799
3.800	1.0524	1.0578	0.9500	0.9622	0.9817
4.000	1.0524	1.0567	0.9517	0.9638	0.9833
4.500	1.0524	1.0543	0.9552	0.9669	0.9865
5.000	1.0525	1.0527	0.9580	0.9694	0.9892
5.500	1.0529	1.0515	0.9604	0.9713	0.9915
6.000	1.0533	1.0505	0.9623	0.9728	0.9935
6.500	1.0538	1.0498	0.9639	0.9740	0.9952
7.000	1.0541	1.0492	0.9653	0.9750	0.9966

TABLE 9b. Ratios of collision integrals for the (30,6)potential function (Continued)

T^*	A^*	B^*	C^*	E^*	F^*
7.500	1.0545	1.0487	0.9664	0.9759	0.9978
8.000	1.0548	1.0483	0.9673	0.9766	0.9988
8.500	1.0551	1.0479	0.9681	0.9773	0.9997
9.000	1.0554	1.0476	0.9688	0.9778	1.0006
9.500	1.0557	1.0473	0.9695	0.9783	1.0013
10.000	1.0559	1.0470	0.9700	0.9787	1.0019
11.000	1.0563	1.0466	0.9709	0.9793	1.0030
12.000	1.0568	1.0463	0.9716	0.9799	1.0040
13.000	1.0571	1.0460	0.9722	0.9803	1.0048
14.000	1.0575	1.0458	0.9728	0.9806	1.0055
15.000	1.0578	1.0456	0.9732	0.9809	1.0060
16.000	1.0581	1.0454	0.9736	0.9812	1.0066
17.000	1.0583	1.0453	0.9739	0.9814	1.0070
18.000	1.0586	1.0451	0.9742	0.9816	1.0074
19.000	1.0588	1.0450	0.9744	0.9817	1.0078
20.000	1.0590	1.0449	0.9746	0.9818	1.0081
22.000	1.0594	1.0448	0.9750	0.9821	1.0087
24.000	1.0597	1.0446	0.9753	0.9822	1.0091
26.000	1.0599	1.0445	0.9755	0.9824	1.0095
28.000	1.0602	1.0444	0.9757	0.9825	1.0098
30.000	1.0604	1.0443	0.9759	0.9826	1.0101
32.000	1.0605	1.0443	0.9760	0.9826	1.0104
34.000	1.0607	1.0442	0.9761	0.9827	1.0106
36.000	1.0608	1.0441	0.9762	0.9827	1.0108
38.000	1.0610	1.0441	0.9763	0.9828	1.0110
40.000	1.0611	1.0440	0.9764	0.9828	1.0111
45.000	1.0614	1.0439	0.9766	0.9829	1.0115
50.000	1.0616	1.0438	0.9767	0.9830	1.0117
55.000	1.0618	1.0438	0.9768	0.9830	1.0120
60.000	1.0619	1.0437	0.9769	0.9831	1.0122
65.000	1.0621	1.0437	0.9770	0.9831	1.0123
70.000	1.0622	1.0436	0.9770	0.9832	1.0125
75.000	1.0623	1.0436	0.9771	0.9832	1.0126
80.000	1.0624	1.0435	0.9771	0.9832	1.0128
85.000	1.0625	1.0435	0.9772	0.9832	1.0129
90.000	1.0626	1.0435	0.9772	0.9832	1.0130
95.000	1.0627	1.0435	0.9772	0.9832	1.0130
100.000	1.0628	1.0434	0.9773	0.9832	1.0131
125.000	1.0630	1.0434	0.9774	0.9833	1.0134
150.000	1.0632	1.0433	0.9774	0.9833	1.0136
175.000	1.0634	1.0433	0.9775	0.9833	1.0137
200.000	1.0635	1.0433	0.9775	0.9833	1.0138

TABLE 9c. Tables of additional functions of the collision integrals for the (30,6) potential function

	Higher order corrections			Isotopic thermal diffusion ratios		
T^*	f_η	f_λ	$f_{\mathscr{D}}$	c.c.$_1$	Kihara$_1$	Kihara$_2$
.100	1.0018	1.0029	1.0019	.288	.292	.294
.150	1.0019	1.0030	1.0019	.287	.291	.293
.200	1.0020	1.0031	1.0018	.282	.285	.288
.250	1.0020	1.0032	1.0017	.271	.274	.278
.300	1.0020	1.0030	1.0015	.257	.259	.264
.350	1.0018	1.0028	1.0014	.241	.243	.248
.400	1.0015	1.0024	1.0012	.228	.229	.233
.450	1.0013	1.0021	1.0011	.216	.218	.221
.500	1.0011	1.0018	1.0010	.208	.210	.212
.550	1.0010	1.0015	1.0010	.204	.205	.207
.600	1.0009	1.0013	1.0010	.202	.204	.205
.650	1.0008	1.0012	1.0010	.204	.206	.206
.700	1.0007	1.0011	1.0010	.207	.210	.209
.750	1.0007	1.0011	1.0011	.212	.215	.213
.800	1.0007	1.0011	1.0011	.219	.222	.220
.850	1.0008	1.0012	1.0012	.227	.231	.228
.900	1.0008	1.0012	1.0014	.237	.241	.238
.950	1.0008	1.0013	1.0015	.247	.252	.248
1.000	1.0009	1.0014	1.0016	.256	.262	.257
1.100	1.0011	1.0017	1.0018	.277	.283	.278
1.200	1.0013	1.0020	1.0021	.299	.306	.300
1.300	1.0015	1.0023	1.0025	.321	.330	.323
1.400	1.0017	1.0027	1.0028	.342	.352	.344
1.500	1.0020	1.0032	1.0031	.361	.372	.364
1.600	1.0024	1.0037	1.0034	.379	.391	.382
1.700	1.0027	1.0041	1.0038	.397	.410	.401
1.800	1.0030	1.0046	1.0041	.415	.428	.419
1.900	1.0033	1.0051	1.0045	.431	.446	.436
2.000	1.0036	1.0055	1.0048	.447	.462	.453
2.200	1.0041	1.0065	1.0054	.474	.491	.482
2.400	1.0047	1.0073	1.0059	.496	.515	.506
2.600	1.0052	1.0081	1.0064	.516	.536	.528
2.800	1.0057	1.0089	1.0068	.534	.555	.548
3.000	1.0061	1.0095	1.0073	.551	.572	.566
3.200	1.0065	1.0101	1.0077	.565	.588	.582
3.400	1.0069	1.0107	1.0080	.578	.601	.596
3.600	1.0072	1.0112	1.0083	.589	.613	.609
3.800	1.0075	1.0116	1.0086	.599	.623	.620
4.000	1.0077	1.0120	1.0089	.608	.633	.630
4.500	1.0083	1.0129	1.0094	.626	.652	.651
5.000	1.0087	1.0136	1.0099	.640	.666	.667
5.500	1.0091	1.0141	1.0102	.652	.679	.681
6.000	1.0094	1.0146	1.0105	.661	.689	.692
6.500	1.0096	1.0149	1.0108	.669	.697	.701
7.000	1.0098	1.0153	1.0110	.675	.704	.709

TABLE 9c. Tables of additional functions of the collision integrals for the (30,6) potential function (Cont'd)

	Higher order corrections			Isotopic thermal diffusion ratios		
T^*	f_η	f_λ	$f_{\mathscr{D}}$	c.c.$_1$	Kihara$_1$	Kihara$_2$
7.500	1.0100	1.0155	1.0112	.681	.710	.715
8.000	1.0101	1.0157	1.0114	.685	.714	.720
8.500	1.0102	1.0159	1.0115	.689	.719	.725
9.000	1.0104	1.0161	1.0116	.693	.722	.729
9.500	1.0104	1.0162	1.0117	.696	.725	.732
10.000	1.0105	1.0164	1.0118	.698	.728	.736
11.000	1.0107	1.0166	1.0120	.702	.733	.741
12.000	1.0108	1.0168	1.0121	.706	.736	.745
13.000	1.0109	1.0169	1.0122	.709	.739	.748
14.000	1.0109	1.0170	1.0123	.711	.742	.751
15.000	1.0110	1.0171	1.0124	.713	.744	.753
16.000	1.0110	1.0172	1.0124	.715	.745	.755
17.000	1.0111	1.0172	1.0125	.716	.747	.757
18.000	1.0111	1.0173	1.0125	.717	.748	.758
19.000	1.0112	1.0174	1.0126	.718	.749	.760
20.000	1.0112	1.0174	1.0126	.719	.750	.761
22.000	1.0112	1.0175	1.0127	.721	.752	.763
24.000	1.0113	1.0175	1.0127	.722	.753	.764
26.000	1.0113	1.0176	1.0128	.723	.754	.765
28.000	1.0113	1.0176	1.0128	.724	.755	.766
30.000	1.0113	1.0176	1.0128	.725	.756	.767
32.000	1.0113	1.0176	1.0129	.725	.757	.768
34.000	1.0114	1.0177	1.0129	.726	.757	.768
36.000	1.0114	1.0177	1.0129	.726	.758	.769
38.000	1.0114	1.0177	1.0129	.726	.758	.769
40.000	1.0114	1.0177	1.0129	.727	.758	.770
45.000	1.0114	1.0177	1.0130	.727	.759	.770
50.000	1.0114	1.0178	1.0130	.728	.760	.771
55.000	1.0114	1.0178	1.0130	.728	.760	.772
60.000	1.0114	1.0178	1.0130	.729	.760	.772
65.000	1.0115	1.0178	1.0130	.729	.761	.772
70.000	1.0115	1.0178	1.0130	.729	.761	.773
75.000	1.0115	1.0178	1.0131	.729	.761	.773
80.000	1.0115	1.0178	1.0131	.730	.761	.773
85.000	1.0115	1.0178	1.0131	.730	.761	.773
90.000	1.0115	1.0178	1.0131	.730	.762	.773
95.000	1.0115	1.0179	1.0131	.730	.762	.773
100.000	1.0115	1.0179	1.0131	.730	.762	.774
125.000	1.0115	1.0179	1.0131	.730	.762	.774
150.000	1.0115	1.0179	1.0131	.731	.762	.774
175.000	1.0115	1.0179	1.0131	.731	.763	.774
200.000	1.0115	1.0179	1.0131	.731	.763	.774

TABLE 10a. Collision integrals for the $(40,6)$ potential function

T^*	$\Omega^{(1,1)*}$	$\Omega^{(2,2)*}$	$\Omega^{(1,2)*}$	$\Omega^{(1,3)*}$	$\Omega^{(2,3)*}$	$\Omega^{(3,3)*}$
.100	2.9341	3.0924	2.6065	2.3889	2.8412	2.7668
.150	2.5621	2.7121	2.2769	2.0873	2.4937	2.4158
.200	2.3275	2.4734	2.0682	1.8944	2.2765	2.1931
.250	2.1596	2.3042	1.9172	1.7526	2.1218	2.0321
.300	2.0302	2.1749	1.7994	1.6412	2.0019	1.9071
.350	1.9257	2.0699	1.7038	1.5511	1.9026	1.8062
.400	1.8386	1.9821	1.6240	1.4767	1.8182	1.7220
.450	1.7633	1.9054	1.5553	1.4139	1.7438	1.6501
.500	1.6992	1.8376	1.4976	1.3620	1.6781	1.5888
.550	1.6420	1.7771	1.4468	1.3176	1.6197	1.5354
.600	1.5918	1.7231	1.4027	1.2797	1.5681	1.4878
.650	1.5478	1.6736	1.3648	1.2476	1.5216	1.4471
.700	1.5073	1.6286	1.3306	1.2193	1.4798	1.4098
.750	1.4708	1.5887	1.3003	1.1947	1.4431	1.3766
.800	1.4389	1.5518	1.2740	1.1735	1.4099	1.3474
.850	1.4099	1.5174	1.2505	1.1547	1.3796	1.3211
.900	1.3829	1.4857	1.2291	1.1379	1.3521	1.2970
.950	1.3580	1.4578	1.2097	1.1229	1.3278	1.2752
1.000	1.3353	1.4319	1.1922	1.1095	1.3056	1.2553
1.100	1.2959	1.3850	1.1620	1.0864	1.2665	1.2206
1.200	1.2626	1.3447	1.1371	1.0675	1.2338	1.1916
1.300	1.2332	1.3104	1.1156	1.0514	1.2062	1.1667
1.400	1.2075	1.2808	1.0972	1.0377	1.1827	1.1452
1.500	1.1851	1.2544	1.0812	1.0259	1.1622	1.1266
1.600	1.1658	1.2313	1.0675	1.0156	1.1445	1.1104
1.700	1.1487	1.2107	1.0554	1.0066	1.1289	1.0962
1.800	1.1333	1.1925	1.0446	.9986	1.1152	1.0836
1.900	1.1192	1.1763	1.0350	.9914	1.1031	1.0723
2.000	1.1063	1.1617	1.0262	.9849	1.0922	1.0621
2.200	1.0842	1.1366	1.0111	.9736	1.0737	1.0448
2.400	1.0658	1.1157	.9986	.9642	1.0584	1.0305
2.600	1.0505	1.0981	.9880	.9561	1.0456	1.0184
2.800	1.0373	1.0831	.9789	.9490	1.0347	1.0081
3.000	1.0255	1.0702	.9709	.9428	1.0253	.9991
3.200	1.0152	1.0590	.9638	.9373	1.0171	.9913
3.400	1.0061	1.0492	.9576	.9323	1.0098	.9843
3.600	.9980	1.0405	.9519	.9278	1.0033	.9782
3.800	.9906	1.0327	.9468	.9236	.9975	.9726
4.000	.9840	1.0256	.9421	.9198	.9922	.9675
4.500	.9699	1.0108	.9320	.9115	.9809	.9567
5.000	.9585	.9987	.9237	.9044	.9717	.9477
5.500	.9490	.9889	.9166	.8983	.9639	.9402
6.000	.9408	.9805	.9104	.8930	.9572	.9338
6.500	.9336	.9732	.9049	.8882	.9513	.9281
7.000	.9274	.9669	.9001	.8839	.9462	.9231

TABLE 10a. Collision integrals for the (40,6) potential function (Cont'd)

T^*	$\Omega^{(1,1)*}$	$\Omega^{(2,2)*}$	$\Omega^{(1,2)*}$	$\Omega^{(1,3)*}$	$\Omega^{(2,3)*}$	$\Omega^{(3,3)*}$
7.500	.9219	.9614	.8957	.8800	.9415	.9187
8.000	.9169	.9563	.8917	.8765	.9373	.9146
8.500	.9124	.9518	.8881	.8732	.9335	.9108
9.000	.9083	.9477	.8847	.8701	.9299	.9074
9.500	.9045	.9439	.8816	.8673	.9267	.9043
10.000	.9010	.9404	.8787	.8646	.9236	.9013
11.000	.8948	.9342	.8734	.8597	.9181	.8960
12.000	.8893	.9287	.8687	.8554	.9132	.8913
13.000	.8845	.9238	.8645	.8515	.9089	.8870
14.000	.8801	.9195	.8607	.8479	.9049	.8832
15.000	.8761	.9155	.8572	.8446	.9013	.8797
16.000	.8725	.9119	.8539	.8415	.8980	.8764
17.000	.8692	.9086	.8510	.8387	.8949	.8735
18.000	.8661	.9055	.8482	.8361	.8920	.8707
19.000	.8632	.9026	.8456	.8336	.8893	.8681
20.000	.8605	.8999	.8431	.8312	.8868	.8656
22.000	.8556	.8950	.8386	.8269	.8822	.8611
24.000	.8512	.8905	.8346	.8231	.8780	.8570
26.000	.8472	.8866	.8309	.8195	.8742	.8533
28.000	.8437	.8829	.8276	.8163	.8707	.8500
30.000	.8403	.8796	.8245	.8133	.8675	.8468
32.000	.8373	.8765	.8216	.8105	.8645	.8439
34.000	.8345	.8736	.8189	.8079	.8617	.8412
36.000	.8318	.8709	.8164	.8055	.8591	.8387
38.000	.8293	.8684	.8141	.8032	.8567	.8363
40.000	.8270	.8660	.8119	.8011	.8544	.8341
45.000	.8217	.8606	.8068	.7961	.8492	.8290
50.000	.8170	.8558	.8023	.7918	.8445	.8245
55.000	.8129	.8515	.7983	.7879	.8404	.8205
60.000	.8091	.8477	.7947	.7844	.8367	.8168
65.000	.8057	.8442	.7914	.7811	.8332	.8135
70.000	.8025	.8409	.7884	.7782	.8301	.8104
75.000	.7996	.8380	.7856	.7754	.8271	.8075
80.000	.7969	.8352	.7830	.7729	.8244	.8049
85.000	.7944	.8326	.7805	.7705	.8219	.8024
90.000	.7920	.8301	.7782	.7682	.8195	.8001
95.000	.7898	.8278	.7761	.7661	.8172	.7979
100.000	.7877	.8257	.7740	.7641	.8151	.7958
125.000	.7786	.8163	.7653	.7555	.8059	.7868
150.000	.7714	.8088	.7582	.7485	.7986	.7797
175.000	.7653	.8025	.7523	.7427	.7924	.7736
200.000	.7601	.7971	.7472	.7377	.7871	.7685

TABLE 10b. Ratios of collision integrals for the (40,6)potential function

T^*	A^*	B^*	C^*	E^*	F^*
0.100	1.0540	1.1850	0.8883	0.9188	0.9430
0.150	1.0586	1.1849	0.8887	0.9195	0.9429
0.200	1.0627	1.1874	0.8886	0.9204	0.9423
0.250	1.0669	1.1926	0.8877	0.9209	0.9410
0.300	1.0712	1.1980	0.8863	0.9205	0.9393
0.350	1.0749	1.2020	0.8848	0.9192	0.9380
0.400	1.0780	1.2037	0.8833	0.9173	0.9366
0.450	1.0806	1.2027	0.8820	0.9152	0.9358
0.500	1.0814	1.2004	0.8813	0.9132	0.9350
0.550	1.0823	1.1958	0.8811	0.9115	0.9351
0.600	1.0825	1.1905	0.8812	0.9100	0.9346
0.650	1.0813	1.1847	0.8818	0.9092	0.9349
0.700	1.0804	1.1781	0.8828	0.9087	0.9353
0.750	1.0802	1.1712	0.8841	0.9084	0.9360
0.800	1.0784	1.1649	0.8854	0.9086	0.9364
0.850	1.0763	1.1587	0.8870	0.9092	0.9370
0.900	1.0744	1.1524	0.8888	0.9100	0.9379
0.950	1.0734	1.1463	0.8908	0.9108	0.9390
1.000	1.0723	1.1405	0.8928	0.9118	0.9401
1.100	1.0688	1.1301	0.8967	0.9144	0.9419
1.200	1.0650	1.1210	0.9006	0.9175	0.9437
1.300	1.0626	1.1128	0.9046	0.9205	0.9460
1.400	1.0607	1.1055	0.9086	0.9234	0.9484
1.500	1.0585	1.0991	0.9124	0.9265	0.9506
1.600	1.0562	1.0935	0.9157	0.9295	0.9525
1.700	1.0540	1.0886	0.9187	0.9324	0.9543
1.800	1.0522	1.0842	0.9218	0.9352	0.9562
1.900	1.0510	1.0804	0.9247	0.9378	0.9581
2.000	1.0500	1.0769	0.9276	0.9402	0.9601
2.200	1.0483	1.0709	0.9326	0.9447	0.9637
2.400	1.0468	1.0662	0.9369	0.9487	0.9668
2.600	1.0453	1.0622	0.9405	0.9522	0.9694
2.800	1.0442	1.0590	0.9437	0.9553	0.9718
3.000	1.0435	1.0563	0.9467	0.9580	0.9742
3.200	1.0431	1.0541	0.9494	0.9604	0.9764
3.400	1.0428	1.0523	0.9518	0.9624	0.9784
3.600	1.0426	1.0507	0.9539	0.9643	0.9802
3.800	1.0425	1.0494	0.9558	0.9659	0.9818
4.000	1.0423	1.0481	0.9575	0.9674	0.9832
4.500	1.0421	1.0458	0.9609	0.9705	0.9863
5.000	1.0419	1.0439	0.9636	0.9729	0.9887
5.500	1.0420	1.0426	0.9658	0.9748	0.9908
6.000	1.0422	1.0416	0.9677	0.9763	0.9926
6.500	1.0424	1.0407	0.9692	0.9775	0.9941
7.000	1.0426	1.0401	0.9705	0.9785	0.9954

TABLE 10b. Ratios of collision integrals for the (40,6)potential function (Continued)

T^*	A^*	B^*	C^*	E^*	F^*
7.500	1.0429	1.0395	0.9716	0.9794	0.9965
8.000	1.0431	1.0390	0.9725	0.9801	0.9975
8.500	1.0432	1.0386	0.9733	0.9807	0.9983
9.000	1.0434	1.0382	0.9741	0.9813	0.9991
9.500	1.0436	1.0379	0.9747	0.9817	0.9997
10.000	1.0437	1.0376	0.9752	0.9821	1.0003
11.000	1.0440	1.0371	0.9761	0.9828	1.0014
12.000	1.0443	1.0367	0.9768	0.9834	1.0022
13.000	1.0445	1.0364	0.9774	0.9838	1.0029
14.000	1.0447	1.0361	0.9779	0.9842	1.0035
15.000	1.0449	1.0359	0.9784	0.9845	1.0041
16.000	1.0451	1.0357	0.9787	0.9847	1.0045
17.000	1.0453	1.0355	0.9791	0.9850	1.0050
18.000	1.0455	1.0353	0.9794	0.9852	1.0053
19.000	1.0456	1.0352	0.9796	0.9853	1.0057
20.000	1.0458	1.0351	0.9798	0.9855	1.0059
22.000	1.0460	1.0349	0.9802	0.9857	1.0065
24.000	1.0462	1.0347	0.9805	0.9859	1.0069
26.000	1.0464	1.0346	0.9807	0.9860	1.0072
28.000	1.0466	1.0345	0.9809	0.9862	1.0075
30.000	1.0467	1.0343	0.9811	0.9863	1.0077
32.000	1.0468	1.0342	0.9813	0.9864	1.0079
34.000	1.0469	1.0342	0.9814	0.9864	1.0081
36.000	1.0470	1.0341	0.9815	0.9865	1.0083
38.000	1.0471	1.0340	0.9816	0.9866	1.0084
40.000	1.0472	1.0339	0.9817	0.9866	1.0086
45.000	1.0473	1.0338	0.9819	0.9867	1.0089
50.000	1.0475	1.0337	0.9820	0.9868	1.0091
55.000	1.0476	1.0336	0.9822	0.9869	1.0094
60.000	1.0477	1.0335	0.9823	0.9870	1.0095
65.000	1.0478	1.0334	0.9823	0.9870	1.0097
70.000	1.0479	1.0334	0.9824	0.9871	1.0098
75.000	1.0480	1.0333	0.9825	0.9871	1.0099
80.000	1.0480	1.0333	0.9825	0.9871	1.0100
85.000	1.0481	1.0332	0.9826	0.9871	1.0101
90.000	1.0482	1.0332	0.9826	0.9872	1.0102
95.000	1.0482	1.0332	0.9827	0.9872	1.0102
100.000	1.0482	1.0332	0.9827	0.9872	1.0103
125.000	1.0484	1.0331	0.9828	0.9873	1.0105
150.000	1.0485	1.0330	0.9829	0.9873	1.0107
175.000	1.0486	1.0329	0.9830	0.9874	1.0109
200.000	1.0487	1.0328	0.9830	0.9874	1.0110

TABLE 10c. Tables of additional functions of the collision integrals for the $^{(40,6)}$ potential function

	Higher order corrections			Isotopic thermal diffusion ratios		
T^*	f_η	f_λ	$f_{\mathscr{D}}$	c.c.$_1$	Kihara$_1$	Kihara$_2$
.100	1.0019	1.0029	1.0019	.290	.294	.295
.150	1.0019	1.0030	1.0019	.290	.294	.296
.200	1.0020	1.0031	1.0019	.289	.293	.295
.250	1.0021	1.0032	1.0019	.283	.287	.290
.300	1.0020	1.0032	1.0018	.275	.278	.282
.350	1.0019	1.0030	1.0017	.266	.269	.273
.400	1.0018	1.0027	1.0016	.258	.261	.264
.450	1.0016	1.0025	1.0015	.251	.254	.256
.500	1.0014	1.0022	1.0014	.247	.250	.252
.550	1.0013	1.0020	1.0014	.245	.248	.249
.600	1.0012	1.0019	1.0014	.246	.249	.249
.650	1.0011	1.0018	1.0015	.249	.252	.252
.700	1.0011	1.0017	1.0015	.254	.257	.256
.750	1.0011	1.0017	1.0016	.260	.264	.262
.800	1.0011	1.0017	1.0017	.267	.272	.269
.850	1.0011	1.0018	1.0018	.275	.280	.277
.900	1.0012	1.0019	1.0019	.284	.290	.287
.950	1.0013	1.0020	1.0021	.295	.301	.297
1.000	1.0013	1.0021	1.0022	.305	.312	.307
1.100	1.0015	1.0024	1.0025	.325	.333	.327
1.200	1.0018	1.0028	1.0029	.346	.355	.348
1.300	1.0020	1.0031	1.0032	.367	.377	.370
1.400	1.0023	1.0036	1.0036	.387	.399	.391
1.500	1.0026	1.0040	1.0040	.407	.420	.411
1.600	1.0029	1.0045	1.0043	.425	.439	.430
1.700	1.0032	1.0050	1.0046	.441	.456	.447
1.800	1.0036	1.0055	1.0050	.457	.473	.464
1.900	1.0039	1.0060	1.0053	.472	.489	.480
2.000	1.0042	1.0065	1.0056	.487	.505	.496
2.200	1.0048	1.0074	1.0063	.513	.533	.524
2.400	1.0053	1.0083	1.0068	.536	.557	.549
2.600	1.0058	1.0091	1.0073	.555	.577	.569
2.800	1.0063	1.0098	1.0077	.572	.595	.588
3.000	1.0068	1.0105	1.0082	.587	.611	.605
3.200	1.0071	1.0111	1.0086	.601	.626	.621
3.400	1.0075	1.0117	1.0089	.613	.639	.635
3.600	1.0078	1.0121	1.0092	.624	.650	.647
3.800	1.0081	1.0126	1.0095	.634	.661	.658
4.000	1.0084	1.0130	1.0098	.642	.670	.668
4.500	1.0089	1.0139	1.0103	.660	.689	.689
5.000	1.0094	1.0146	1.0108	.674	.703	.704
5.500	1.0097	1.0152	1.0111	.685	.715	.718
6.000	1.0100	1.0156	1.0115	.694	.725	.728
6.500	1.0103	1.0160	1.0117	.702	.733	.738
7.000	1.0105	1.0163	1.0120	.709	.740	.745

TABLE 10c. Tables of additional functions of the collision integrals for the (40,6) potential function (Cont'd)

	Higher order corrections			Isotopic thermal diffusion ratios		
T^*	f_η	f_λ	$f_{\mathscr{D}}$	c.c.$_1$	Kihara$_1$	Kihara$_2$
7.500	1.0107	1.0166	1.0121	.714	.746	.752
8.000	1.0108	1.0168	1.0123	.719	.751	.757
8.500	1.0109	1.0170	1.0124	.723	.755	.762
9.000	1.0111	1.0172	1.0126	.726	.759	.766
9.500	1.0112	1.0174	1.0127	.729	.762	.769
10.000	1.0112	1.0175	1.0128	.732	.765	.773
11.000	1.0114	1.0177	1.0129	.736	.769	.778
12.000	1.0115	1.0179	1.0131	.740	.773	.782
13.000	1.0116	1.0180	1.0132	.742	.776	.786
14.000	1.0117	1.0182	1.0133	.745	.779	.788
15.000	1.0117	1.0183	1.0134	.747	.781	.791
16.000	1.0118	1.0184	1.0134	.749	.783	.793
17.000	1.0118	1.0184	1.0135	.750	.784	.795
18.000	1.0119	1.0185	1.0135	.752	.786	.796
19.000	1.0119	1.0186	1.0136	.753	.787	.798
20.000	1.0120	1.0186	1.0136	.754	.788	.799
22.000	1.0120	1.0187	1.0137	.755	.790	.801
24.000	1.0120	1.0187	1.0137	.757	.791	.803
26.000	1.0121	1.0188	1.0138	.758	.792	.804
28.000	1.0121	1.0188	1.0138	.759	.793	.805
30.000	1.0121	1.0189	1.0139	.760	.794	.806
32.000	1.0121	1.0189	1.0139	.760	.795	.807
34.000	1.0122	1.0189	1.0139	.761	.796	.808
36.000	1.0122	1.0189	1.0139	.761	.796	.808
38.000	1.0122	1.0190	1.0139	.762	.797	.809
40.000	1.0122	1.0190	1.0140	.762	.797	.809
45.000	1.0122	1.0190	1.0140	.763	.798	.810
50.000	1.0123	1.0191	1.0140	.764	.799	.811
55.000	1.0123	1.0191	1.0140	.764	.799	.812
60.000	1.0123	1.0191	1.0141	.765	.800	.812
65.000	1.0123	1.0191	1.0141	.765	.800	.812
70.000	1.0123	1.0191	1.0141	.765	.800	.813
75.000	1.0123	1.0191	1.0141	.765	.801	.813
80.000	1.0123	1.0192	1.0141	.766	.801	.813
85.000	1.0123	1.0192	1.0141	.766	.801	.814
90.000	1.0123	1.0192	1.0141	.766	.801	.814
95.000	1.0123	1.0192	1.0141	.766	.801	.814
100.000	1.0123	1.0192	1.0141	.766	.801	.814
125.000	1.0123	1.0192	1.0142	.767	.802	.815
150.000	1.0124	1.0192	1.0142	.767	.802	.815
175.000	1.0124	1.0192	1.0142	.767	.803	.815
200.000	1.0124	1.0192	1.0142	.768	.803	.816

TABLE 11a. Collision integrals for the (50,6) potential function

T^*	$\Omega^{(1,1)*}$	$\Omega^{(2,2)*}$	$\Omega^{(1,2)*}$	$\Omega^{(1,3)*}$	$\Omega^{(2,3)*}$	$\Omega^{(3,3)*}$
.100	2.8571	3.0144	2.5391	2.3282	2.7703	2.6945
.150	2.4963	2.6452	2.2201	2.0367	2.4332	2.3553
.200	2.2693	2.4133	2.0188	1.8516	2.2219	2.1408
.250	2.1075	2.2490	1.8743	1.7173	2.0719	1.9864
.300	1.9834	2.1234	1.7624	1.6124	1.9558	1.8671
.350	1.8834	2.0221	1.6718	1.5277	1.8606	1.7707
.400	1.8000	1.9372	1.5961	1.4576	1.7799	1.6904
.450	1.7293	1.8633	1.5323	1.3995	1.7089	1.6231
.500	1.6680	1.7991	1.4774	1.3503	1.6471	1.5641
.550	1.6146	1.7414	1.4304	1.3091	1.5920	1.5143
.600	1.5667	1.6901	1.3886	1.2733	1.5432	1.4691
.650	1.5252	1.6437	1.3530	1.2432	1.4999	1.4304
.700	1.4877	1.6009	1.3214	1.2169	1.4605	1.3959
.750	1.4535	1.5628	1.2930	1.1939	1.4257	1.3648
.800	1.4226	1.5285	1.2679	1.1737	1.3947	1.3370
.850	1.3955	1.4964	1.2459	1.1561	1.3665	1.3122
.900	1.3705	1.4665	1.2259	1.1404	1.3406	1.2897
.950	1.3474	1.4396	1.2079	1.1264	1.3176	1.2694
1.000	1.3261	1.4153	1.1915	1.1139	1.2968	1.2508
1.100	1.2885	1.3718	1.1630	1.0922	1.2604	1.2183
1.200	1.2573	1.3340	1.1396	1.0745	1.2297	1.1911
1.300	1.2301	1.3014	1.1197	1.0596	1.2037	1.1679
1.400	1.2060	1.2736	1.1024	1.0468	1.1817	1.1479
1.500	1.1849	1.2490	1.0875	1.0357	1.1624	1.1303
1.600	1.1665	1.2274	1.0746	1.0262	1.1458	1.1151
1.700	1.1505	1.2080	1.0632	1.0177	1.1310	1.1017
1.800	1.1362	1.1909	1.0532	1.0103	1.1181	1.0899
1.900	1.1231	1.1755	1.0443	1.0036	1.1066	1.0793
2.000	1.1112	1.1617	1.0361	.9976	1.0962	1.0696
2.200	1.0904	1.1380	1.0220	.9871	1.0786	1.0532
2.400	1.0732	1.1184	1.0104	.9783	1.0642	1.0397
2.600	1.0587	1.1016	1.0005	.9708	1.0519	1.0281
2.800	1.0464	1.0874	.9920	.9643	1.0415	1.0183
3.000	1.0356	1.0753	.9847	.9586	1.0327	1.0100
3.200	1.0260	1.0646	.9781	.9536	1.0249	1.0025
3.400	1.0174	1.0552	.9723	.9490	1.0179	.9959
3.600	1.0099	1.0470	.9671	.9449	1.0119	.9901
3.800	1.0031	1.0398	.9624	.9412	1.0065	.9850
4.000	.9970	1.0331	.9582	.9377	1.0016	.9803
4.500	.9839	1.0190	.9489	.9302	.9910	.9701
5.000	.9734	1.0079	.9413	.9239	.9825	.9620
5.500	.9646	.9984	.9349	.9185	.9753	.9551
6.000	.9572	.9908	.9294	.9138	.9693	.9493
6.500	.9506	.9841	.9245	.9096	.9640	.9442
7.000	.9449	.9782	.9201	.9058	.9592	.9397

TABLE 11a. Collision integrals for the (50,6) potential function (Cont'd)

T^*	$\Omega^{(1,1)*}$	$\Omega^{(2,2)*}$	$\Omega^{(1,2)*}$	$\Omega^{(1,3)*}$	$\Omega^{(2,3)*}$	$\Omega^{(3,3)*}$
7.500	.9399	.9732	.9163	.9024	.9552	.9357
8.000	.9354	.9687	.9128	.8993	.9514	.9321
8.500	.9314	.9645	.9095	.8964	.9480	.9288
9.000	.9277	.9608	.9066	.8938	.9448	.9258
9.500	.9243	.9574	.9038	.8913	.9420	.9230
10.000	.9212	.9544	.9013	.8890	.9393	.9204
11.000	.9156	.9487	.8967	.8848	.9344	.9157
12.000	.9108	.9439	.8926	.8811	.9302	.9116
13.000	.9065	.9396	.8890	.8777	.9264	.9079
14.000	.9027	.9357	.8857	.8746	.9230	.9046
15.000	.8992	.9323	.8827	.8718	.9198	.9016
16.000	.8961	.9291	.8799	.8692	.9170	.8988
17.000	.8932	.9262	.8773	.8668	.9143	.8963
18.000	.8905	.9235	.8749	.8645	.9119	.8939
19.000	.8880	.9210	.8727	.8624	.9096	.8917
20.000	.8856	.9187	.8706	.8604	.9074	.8896
22.000	.8814	.9145	.8668	.8568	.9035	.8857
24.000	.8776	.9107	.8633	.8535	.9000	.8823
26.000	.8742	.9073	.8602	.8505	.8967	.8791
28.000	.8711	.9042	.8574	.8478	.8938	.8763
30.000	.8683	.9013	.8547	.8452	.8911	.8736
32.000	.8657	.8987	.8523	.8429	.8885	.8712
34.000	.8633	.8963	.8500	.8407	.8862	.8689
36.000	.8610	.8940	.8479	.8386	.8840	.8668
38.000	.8589	.8918	.8459	.8367	.8819	.8648
40.000	.8569	.8898	.8440	.8349	.8800	.8629
45.000	.8524	.8852	.8397	.8307	.8756	.8586
50.000	.8484	.8812	.8360	.8270	.8717	.8548
55.000	.8449	.8776	.8326	.8237	.8682	.8514
60.000	.8417	.8744	.8295	.8208	.8651	.8483
65.000	.8388	.8714	.8267	.8180	.8622	.8455
70.000	.8361	.8687	.8242	.8155	.8595	.8429
75.000	.8337	.8662	.8218	.8132	.8570	.8404
80.000	.8314	.8638	.8196	.8110	.8547	.8382
85.000	.8292	.8616	.8175	.8090	.8526	.8361
90.000	.8272	.8596	.8156	.8071	.8506	.8341
95.000	.8253	.8576	.8137	.8053	.8486	.8322
100.000	.8236	.8558	.8120	.8036	.8468	.8305
125.000	.8159	.8479	.8046	.7963	.8391	.8228
150.000	.8097	.8415	.7985	.7904	.8328	.8167
175.000	.8046	.8362	.7935	.7854	.8277	.8117
200.000	.8002	.8317	.7892	.7812	.8233	.8074

TABLE 11b. Ratios of collision integrals for the (50,6)potential function

T^*	A^*	B^*	C^*	E^*	F^*
0.100	1.0551	1.1840	0.8887	0.9190	0.9431
0.150	1.0597	1.1831	0.8893	0.9199	0.9435
0.200	1.0635	1.1842	0.8896	0.9207	0.9434
0.250	1.0672	1.1874	0.8893	0.9212	0.9426
0.300	1.0706	1.1910	0.8886	0.9211	0.9414
0.350	1.0736	1.1937	0.8876	0.9202	0.9401
0.400	1.0762	1.1945	0.8867	0.9188	0.9391
0.450	1.0775	1.1933	0.8861	0.9171	0.9386
0.500	1.0786	1.1904	0.8857	0.9155	0.9377
0.550	1.0785	1.1862	0.8859	0.9142	0.9378
0.600	1.0787	1.1807	0.8863	0.9131	0.9377
0.650	1.0777	1.1752	0.8871	0.9125	0.9379
0.700	1.0761	1.1690	0.8882	0.9123	0.9383
0.750	1.0752	1.1625	0.8896	0.9123	0.9390
0.800	1.0744	1.1559	0.8912	0.9125	0.9398
0.850	1.0723	1.1500	0.8928	0.9132	0.9404
0.900	1.0701	1.1441	0.8945	0.9142	0.9411
0.950	1.0684	1.1383	0.8965	0.9152	0.9421
1.000	1.0673	1.1327	0.8985	0.9163	0.9432
1.100	1.0647	1.1223	0.9026	0.9188	0.9455
1.200	1.0610	1.1135	0.9064	0.9219	0.9474
1.300	1.0580	1.1057	0.9102	0.9249	0.9494
1.400	1.0561	1.0987	0.9141	0.9278	0.9518
1.500	1.0541	1.0924	0.9178	0.9307	0.9539
1.600	1.0522	1.0870	0.9212	0.9335	0.9560
1.700	1.0500	1.0823	0.9242	0.9363	0.9576
1.800	1.0481	1.0782	0.9270	0.9389	0.9592
1.900	1.0466	1.0745	0.9298	0.9414	0.9609
2.000	1.0455	1.0712	0.9324	0.9437	0.9626
2.200	1.0437	1.0655	0.9373	0.9478	0.9658
2.400	1.0421	1.0609	0.9415	0.9515	0.9687
2.600	1.0406	1.0571	0.9450	0.9549	0.9711
2.800	1.0392	1.0540	0.9480	0.9578	0.9731
3.000	1.0383	1.0514	0.9508	0.9604	0.9752
3.200	1.0376	1.0491	0.9533	0.9627	0.9771
3.400	1.0371	1.0472	0.9556	0.9647	0.9788
3.600	1.0368	1.0457	0.9576	0.9664	0.9804
3.800	1.0365	1.0443	0.9594	0.9680	0.9819
4.000	1.0362	1.0431	0.9611	0.9695	0.9833
4.500	1.0357	1.0405	0.9644	0.9725	0.9860
5.000	1.0354	1.0387	0.9671	0.9748	0.9883
5.500	1.0351	1.0371	0.9692	0.9768	0.9901
6.000	1.0352	1.0361	0.9710	0.9783	0.9918
6.500	1.0352	1.0351	0.9725	0.9795	0.9932
7.000	1.0353	1.0344	0.9738	0.9806	0.9944

TABLE 11b. Ratios of collision integrals for the (50,6)potential function (Continued)

T^*	A^*	B^*	C^*	E^*	F^*
7.500	1.0354	1.0338	0.9748	0.9814	0.9955
8.000	1.0356	1.0332	0.9758	0.9822	0.9965
8.500	1.0356	1.0328	0.9765	0.9828	0.9972
9.000	1.0357	1.0324	0.9772	0.9834	0.9979
9.500	1.0358	1.0320	0.9779	0.9838	0.9986
10.000	1.0360	1.0318	0.9784	0.9842	0.9991
11.000	1.0361	1.0312	0.9793	0.9850	1.0001
12.000	1.0363	1.0308	0.9800	0.9855	1.0009
13.000	1.0365	1.0304	0.9806	0.9860	1.0016
14.000	1.0366	1.0301	0.9811	0.9863	1.0021
15.000	1.0367	1.0298	0.9816	0.9867	1.0026
16.000	1.0369	1.0296	0.9819	0.9870	1.0031
17.000	1.0370	1.0294	0.9823	0.9872	1.0035
18.000	1.0371	1.0292	0.9826	0.9874	1.0038
19.000	1.0372	1.0291	0.9828	0.9876	1.0042
20.000	1.0373	1.0289	0.9830	0.9877	1.0044
22.000	1.0376	1.0287	0.9834	0.9880	1.0049
24.000	1.0377	1.0285	0.9837	0.9882	1.0054
26.000	1.0378	1.0284	0.9840	0.9884	1.0057
28.000	1.0380	1.0282	0.9842	0.9885	1.0059
30.000	1.0380	1.0281	0.9844	0.9886	1.0061
32.000	1.0381	1.0280	0.9845	0.9887	1.0063
34.000	1.0382	1.0279	0.9846	0.9888	1.0065
36.000	1.0383	1.0278	0.9848	0.9888	1.0067
38.000	1.0383	1.0278	0.9849	0.9889	1.0068
40.000	1.0384	1.0277	0.9850	0.9890	1.0070
45.000	1.0385	1.0275	0.9852	0.9891	1.0073
50.000	1.0387	1.0274	0.9853	0.9892	1.0075
55.000	1.0387	1.0273	0.9854	0.9893	1.0077
60.000	1.0388	1.0272	0.9855	0.9894	1.0078
65.000	1.0389	1.0271	0.9856	0.9894	1.0080
70.000	1.0389	1.0271	0.9857	0.9894	1.0081
75.000	1.0390	1.0270	0.9858	0.9895	1.0081
80.000	1.0390	1.0270	0.9858	0.9895	1.0082
85.000	1.0391	1.0270	0.9859	0.9895	1.0083
90.000	1.0391	1.0270	0.9859	0.9895	1.0083
95.000	1.0391	1.0269	0.9859	0.9895	1.0083
100.000	1.0391	1.0269	0.9860	0.9895	1.0084
125.000	1.0392	1.0268	0.9861	0.9896	1.0085
150.000	1.0392	1.0267	0.9862	0.9897	1.0087
175.000	1.0393	1.0265	0.9862	0.9898	1.0088
200.000	1.0394	1.0265	0.9863	0.9899	1.0090

TABLE 11c. Tables of additional functions of the collision integrals for the (50,6) potential function

	Higher order corrections			Isotopic thermal diffusion ratios		
T^*	f_η	f_λ	$f_{\mathscr{D}}$	c.c.$_1$	Kihara$_1$	Kihara$_2$
.100	1.0019	1.0030	1.0019	.291	.295	.297
.150	1.0020	1.0031	1.0020	.293	.297	.299
.200	1.0020	1.0032	1.0020	.294	.298	.300
.250	1.0021	1.0033	1.0020	.291	.295	.298
.300	1.0021	1.0032	1.0019	.287	.290	.293
.350	1.0020	1.0031	1.0019	.281	.285	.288
.400	1.0019	1.0029	1.0018	.276	.279	.282
.450	1.0017	1.0027	1.0018	.272	.275	.278
.500	1.0016	1.0025	1.0017	.270	.273	.275
.550	1.0015	1.0023	1.0017	.270	.274	.275
.600	1.0014	1.0022	1.0018	.272	.276	.276
.650	1.0014	1.0021	1.0018	.276	.281	.280
.700	1.0014	1.0021	1.0019	.282	.287	.285
.750	1.0014	1.0021	1.0020	.289	.294	.292
.800	1.0014	1.0021	1.0021	.297	.303	.300
.850	1.0014	1.0022	1.0022	.305	.312	.308
.900	1.0015	1.0023	1.0024	.315	.322	.318
.950	1.0016	1.0025	1.0025	.325	.332	.328
1.000	1.0017	1.0026	1.0027	.335	.344	.338
1.100	1.0019	1.0029	1.0030	.356	.366	.360
1.200	1.0022	1.0033	1.0034	.376	.387	.380
1.300	1.0024	1.0038	1.0037	.397	.409	.401
1.400	1.0027	1.0042	1.0041	.417	.430	.422
1.500	1.0030	1.0047	1.0045	.436	.451	.442
1.600	1.0034	1.0052	1.0049	.454	.470	.461
1.700	1.0037	1.0057	1.0052	.470	.487	.478
1.800	1.0040	1.0062	1.0056	.485	.503	.494
1.900	1.0043	1.0067	1.0059	.500	.518	.509
2.000	1.0046	1.0072	1.0062	.514	.533	.524
2.200	1.0052	1.0081	1.0069	.539	.560	.552
2.400	1.0057	1.0089	1.0074	.561	.584	.576
2.600	1.0062	1.0097	1.0079	.580	.604	.597
2.800	1.0067	1.0104	1.0084	.596	.621	.615
3.000	1.0071	1.0111	1.0088	.611	.636	.631
3.200	1.0075	1.0117	1.0092	.624	.651	.646
3.400	1.0079	1.0123	1.0095	.636	.663	.659
3.600	1.0082	1.0127	1.0098	.646	.674	.671
3.800	1.0085	1.0132	1.0101	.656	.684	.682
4.000	1.0087	1.0136	1.0104	.664	.693	.692
4.500	1.0093	1.0145	1.0109	.682	.712	.712
5.000	1.0098	1.0152	1.0114	.695	.727	.728
5.500	1.0101	1.0158	1.0117	.706	.738	.741
6.000	1.0104	1.0162	1.0121	.715	.748	.752
6.500	1.0107	1.0166	1.0123	.723	.756	.761
7.000	1.0109	1.0170	1.0125	.730	.763	.768

TABLE 11c. Tables of additional functions of the collision integrals for the (50,6) potential function (Cont'd)

	Higher order corrections			Isotopic thermal diffusion ratios		
T^*	f_η	f_λ	$f_{\mathscr{D}}$	c.c.$_1$	Kihara$_1$	Kihara$_2$
7.500	1.0111	1.0173	1.0127	.735	.769	.775
8.000	1.0113	1.0175	1.0129	.740	.774	.780
8.500	1.0114	1.0177	1.0131	.744	.778	.785
9.000	1.0115	1.0179	1.0132	.747	.782	.789
9.500	1.0116	1.0181	1.0133	.750	.785	.793
10.000	1.0117	1.0182	1.0134	.753	.788	.796
11.000	1.0118	1.0184	1.0136	.757	.792	.802
12.000	1.0120	1.0186	1.0137	.761	.796	.806
13.000	1.0121	1.0188	1.0138	.764	.799	.809
14.000	1.0121	1.0189	1.0139	.766	.802	.812
15.000	1.0122	1.0190	1.0140	.768	.804	.815
16.000	1.0123	1.0191	1.0140	.770	.806	.817
17.000	1.0123	1.0192	1.0141	.772	.808	.819
18.000	1.0124	1.0193	1.0142	.773	.809	.821
19.000	1.0124	1.0193	1.0142	.774	.811	.822
20.000	1.0125	1.0194	1.0143	.775	.812	.823
22.000	1.0125	1.0195	1.0143	.777	.814	.825
24.000	1.0126	1.0195	1.0144	.779	.815	.827
26.000	1.0126	1.0196	1.0144	.780	.817	.829
28.000	1.0126	1.0196	1.0145	.781	.818	.830
30.000	1.0126	1.0197	1.0145	.782	.818	.831
32.000	1.0127	1.0197	1.0145	.782	.819	.832
34.000	1.0127	1.0197	1.0146	.783	.820	.832
36.000	1.0127	1.0197	1.0146	.783	.820	.833
38.000	1.0127	1.0198	1.0146	.784	.821	.834
40.000	1.0127	1.0198	1.0146	.784	.821	.834
45.000	1.0128	1.0198	1.0147	.785	.822	.835
50.000	1.0128	1.0199	1.0147	.786	.823	.836
55.000	1.0128	1.0199	1.0147	.787	.824	.837
60.000	1.0128	1.0199	1.0147	.787	.824	.837
65.000	1.0128	1.0199	1.0147	.787	.825	.838
70.000	1.0128	1.0200	1.0148	.788	.825	.838
75.000	1.0128	1.0200	1.0148	.788	.825	.838
80.000	1.0128	1.0200	1.0148	.788	.826	.839
85.000	1.0128	1.0200	1.0148	.788	.826	.839
90.000	1.0128	1.0200	1.0148	.789	.826	.839
95.000	1.0129	1.0200	1.0148	.789	.826	.839
100.000	1.0129	1.0200	1.0148	.789	.826	.840
125.000	1.0129	1.0200	1.0148	.790	.827	.840
150.000	1.0129	1.0200	1.0149	.790	.827	.841
175.000	1.0129	1.0201	1.0149	.790	.828	.841
200.000	1.0129	1.0201	1.0149	.790	.828	.841

TABLE 12a. Collision integrals for the (75,6) potential function

T^*	$\Omega^{(1,1)*}$	$\Omega^{(2,2)*}$	$\Omega^{(1,2)*}$	$\Omega^{(1,3)*}$	$\Omega^{(2,3)*}$	$\Omega^{(3,3)*}$
.100	2.7535	2.9095	2.4490	2.2473	2.6750	2.5985
.150	2.4083	2.5547	2.1443	1.9695	2.3511	2.2740
.200	2.1916	2.3320	1.9529	1.7946	2.1482	2.0700
.250	2.0378	2.1743	1.8166	1.6691	2.0042	1.9242
.300	1.9204	2.0538	1.7120	1.5725	1.8934	1.8121
.350	1.8263	1.9572	1.6279	1.4948	1.8035	1.7221
.400	1.7485	1.8762	1.5585	1.4314	1.7272	1.6477
.450	1.6828	1.8068	1.5001	1.3786	1.6615	1.5847
.500	1.6259	1.7463	1.4499	1.3340	1.6040	1.5308
.550	1.5766	1.6928	1.4069	1.2965	1.5537	1.4843
.600	1.5331	1.6444	1.3694	1.2644	1.5083	1.4434
.650	1.4942	1.6021	1.3364	1.2367	1.4689	1.4074
.700	1.4600	1.5626	1.3077	1.2128	1.4327	1.3753
.750	1.4292	1.5270	1.2824	1.1921	1.4008	1.3473
.800	1.4011	1.4952	1.2596	1.1739	1.3723	1.3220
.850	1.3755	1.4659	1.2390	1.1576	1.3464	1.2988
.900	1.3526	1.4391	1.2209	1.1434	1.3233	1.2784
.950	1.3320	1.4142	1.2048	1.1309	1.3021	1.2600
1.000	1.3129	1.3915	1.1901	1.1196	1.2830	1.2433
1.100	1.2786	1.3515	1.1642	1.1000	1.2498	1.2135
1.200	1.2496	1.3175	1.1427	1.0840	1.2221	1.1889
1.300	1.2251	1.2878	1.1249	1.0706	1.1986	1.1680
1.400	1.2035	1.2618	1.1094	1.0592	1.1782	1.1498
1.500	1.1845	1.2397	1.0960	1.0494	1.1610	1.1342
1.600	1.1677	1.2202	1.0844	1.0409	1.1459	1.1204
1.700	1.1529	1.2027	1.0741	1.0334	1.1326	1.1083
1.800	1.1397	1.1868	1.0650	1.0267	1.1206	1.0973
1.900	1.1282	1.1728	1.0571	1.0208	1.1100	1.0877
2.000	1.1176	1.1603	1.0499	1.0154	1.1006	1.0791
2.200	1.0990	1.1386	1.0374	1.0062	1.0844	1.0639
2.400	1.0834	1.1206	1.0269	.9984	1.0709	1.0513
2.600	1.0704	1.1055	1.0182	.9918	1.0597	1.0409
2.800	1.0591	1.0923	1.0106	.9861	1.0500	1.0317
3.000	1.0496	1.0809	1.0041	.9811	1.0417	1.0239
3.200	1.0412	1.0714	.9984	.9768	1.0347	1.0174
3.400	1.0336	1.0627	.9933	.9728	1.0284	1.0114
3.600	1.0267	1.0549	.9887	.9693	1.0227	1.0060
3.800	1.0207	1.0482	.9846	.9661	1.0178	1.0014
4.000	1.0153	1.0423	.9810	.9633	1.0136	.9974
4.500	1.0037	1.0295	.9730	.9571	1.0043	.9886
5.000	.9945	1.0195	.9666	.9519	.9971	.9817
5.500	.9869	1.0114	.9612	.9476	.9911	.9760
6.000	.9805	1.0046	.9566	.9438	.9860	.9711
6.500	.9750	.9989	.9527	.9405	.9817	.9670
7.000	.9701	.9940	.9491	.9375	.9778	.9634

TABLE 12a. Collision integrals for the (75,6) potential function (Cont'd)

T^*	$\Omega^{(1,1)*}$	$\Omega^{(2,2)*}$	$\Omega^{(1,2)*}$	$\Omega^{(1,3)*}$	$\Omega^{(2,3)*}$	$\Omega^{(3,3)*}$
7.500	.9659	.9896	.9460	.9349	.9744	.9601
8.000	.9621	.9858	.9432	.9324	.9714	.9572
8.500	.9587	.9824	.9406	.9302	.9686	.9546
9.000	.9557	.9793	.9383	.9282	.9661	.9521
9.500	.9529	.9765	.9361	.9263	.9637	.9499
10.000	.9504	.9739	.9341	.9245	.9616	.9478
11.000	.9459	.9694	.9305	.9213	.9578	.9442
12.000	.9420	.9654	.9274	.9184	.9545	.9410
13.000	.9385	.9621	.9246	.9159	.9516	.9382
14.000	.9355	.9590	.9220	.9136	.9490	.9357
15.000	.9327	.9562	.9197	.9115	.9466	.9334
16.000	.9303	.9538	.9176	.9096	.9444	.9313
17.000	.9280	.9516	.9157	.9078	.9425	.9294
18.000	.9259	.9495	.9139	.9061	.9406	.9276
19.000	.9240	.9476	.9122	.9045	.9388	.9259
20.000	.9222	.9459	.9107	.9031	.9372	.9244
22.000	.9190	.9426	.9078	.9004	.9343	.9215
24.000	.9161	.9397	.9052	.8979	.9315	.9188
26.000	.9135	.9371	.9029	.8957	.9291	.9165
28.000	.9112	.9348	.9008	.8937	.9269	.9143
30.000	.9091	.9327	.8989	.8918	.9249	.9124
32.000	.9071	.9307	.8970	.8901	.9230	.9105
34.000	.9053	.9288	.8954	.8885	.9213	.9088
36.000	.9036	.9271	.8938	.8870	.9197	.9073
38.000	.9020	.9256	.8924	.8856	.9183	.9059
40.000	.9005	.9241	.8910	.8843	.9169	.9045
45.000	.8972	.9207	.8879	.8813	.9137	.9015
50.000	.8943	.9178	.8851	.8787	.9111	.8989
55.000	.8917	.9153	.8827	.8763	.9086	.8965
60.000	.8894	.9130	.8805	.8742	.9065	.8944
65.000	.8872	.9109	.8785	.8722	.9045	.8925
70.000	.8853	.9090	.8766	.8705	.9027	.8907
75.000	.8835	.9073	.8749	.8688	.9010	.8891
80.000	.8819	.9057	.8734	.8673	.8994	.8876
85.000	.8803	.9042	.8719	.8658	.8980	.8861
90.000	.8789	.9028	.8705	.8645	.8966	.8848
95.000	.8775	.9014	.8692	.8631	.8952	.8834
100.000	.8762	.9001	.8680	.8619	.8939	.8822
125.000	.8707	.8945	.8626	.8566	.8882	.8766
150.000	.8663	.8900	.8582	.8523	.8837	.8721
175.000	.8626	.8862	.8546	.8487	.8799	.8684
200.000	.8594	.8827	.8514	.8455	.8765	.8650

TABLE 12b. Ratios of collision integrals for the (75,6) potential function

T^*	A^*	B^*	C^*	E^*	F^*
0.100	1.0567	1.1825	0.8894	0.9194	0.9437
0.150	1.0608	1.1807	0.8904	0.9203	0.9442
0.200	1.0641	1.1801	0.8911	0.9212	0.9445
0.250	1.0670	1.1809	0.8914	0.9218	0.9443
0.300	1.0695	1.1821	0.8915	0.9219	0.9436
0.350	1.0717	1.1827	0.8914	0.9215	0.9430
0.400	1.0730	1.1820	0.8913	0.9206	0.9423
0.450	1.0737	1.1801	0.8914	0.9196	0.9417
0.500	1.0740	1.1767	0.8917	0.9185	0.9415
0.550	1.0737	1.1723	0.8924	0.9178	0.9414
0.600	1.0726	1.1673	0.8932	0.9172	0.9415
0.650	1.0722	1.1614	0.8944	0.9169	0.9419
0.700	1.0703	1.1557	0.8957	0.9169	0.9420
0.750	1.0684	1.1497	0.8972	0.9173	0.9427
0.800	1.0672	1.1436	0.8990	0.9178	0.9435
0.850	1.0657	1.1375	0.9008	0.9185	0.9442
0.900	1.0639	1.1318	0.9026	0.9195	0.9451
0.950	1.0617	1.1265	0.9045	0.9208	0.9459
1.000	1.0599	1.1213	0.9065	0.9220	0.9470
1.100	1.0571	1.1113	0.9106	0.9247	0.9491
1.200	1.0544	1.1026	0.9145	0.9276	0.9514
1.300	1.0511	1.0952	0.9182	0.9307	0.9534
1.400	1.0484	1.0885	0.9218	0.9338	0.9554
1.500	1.0466	1.0826	0.9253	0.9365	0.9575
1.600	1.0449	1.0775	0.9286	0.9391	0.9595
1.700	1.0432	1.0730	0.9317	0.9417	0.9613
1.800	1.0414	1.0690	0.9345	0.9442	0.9628
1.900	1.0396	1.0656	0.9370	0.9465	0.9641
2.000	1.0382	1.0626	0.9394	0.9486	0.9655
2.200	1.0360	1.0574	0.9439	0.9523	0.9680
2.400	1.0343	1.0532	0.9478	0.9556	0.9704
2.600	1.0328	1.0497	0.9512	0.9586	0.9725
2.800	1.0313	1.0467	0.9542	0.9613	0.9741
3.000	1.0299	1.0442	0.9567	0.9637	0.9756
3.200	1.0290	1.0421	0.9589	0.9658	0.9771
3.400	1.0281	1.0401	0.9610	0.9677	0.9785
3.600	1.0274	1.0384	0.9629	0.9695	0.9798
3.800	1.0269	1.0370	0.9646	0.9710	0.9811
4.000	1.0266	1.0357	0.9661	0.9724	0.9823
4.500	1.0257	1.0329	0.9694	0.9755	0.9849
5.000	1.0252	1.0308	0.9719	0.9780	0.9871
5.500	1.0248	1.0292	0.9740	0.9799	0.9889
6.000	1.0246	1.0279	0.9757	0.9815	0.9905
6.500	1.0246	1.0269	0.9771	0.9827	0.9919
7.000	1.0246	1.0262	0.9784	0.9838	0.9930

TABLE 12b. Ratios of collision integrals for the (75,6)potential function (Continued)

T^*	A^*	B^*	C^*	E^*	F^*
7.500	1.0246	1.0255	0.9794	0.9846	0.9940
8.000	1.0246	1.0250	0.9803	0.9853	0.9949
8.500	1.0247	1.0245	0.9811	0.9859	0.9956
9.000	1.0247	1.0241	0.9818	0.9865	0.9963
9.500	1.0247	1.0238	0.9824	0.9869	0.9968
10.000	1.0248	1.0235	0.9829	0.9873	0.9973
11.000	1.0249	1.0229	0.9838	0.9880	0.9982
12.000	1.0249	1.0224	0.9845	0.9886	0.9990
13.000	1.0251	1.0220	0.9851	0.9891	0.9997
14.000	1.0251	1.0217	0.9856	0.9895	1.0002
15.000	1.0252	1.0214	0.9860	0.9899	1.0007
16.000	1.0253	1.0211	0.9864	0.9901	1.0011
17.000	1.0254	1.0209	0.9867	0.9904	1.0015
18.000	1.0255	1.0207	0.9870	0.9906	1.0018
19.000	1.0255	1.0206	0.9873	0.9908	1.0020
20.000	1.0256	1.0205	0.9875	0.9909	1.0023
22.000	1.0258	1.0203	0.9879	0.9911	1.0027
24.000	1.0258	1.0201	0.9882	0.9913	1.0030
26.000	1.0259	1.0200	0.9884	0.9914	1.0033
28.000	1.0259	1.0199	0.9886	0.9916	1.0034
30.000	1.0260	1.0197	0.9888	0.9917	1.0036
32.000	1.0260	1.0196	0.9889	0.9918	1.0038
34.000	1.0260	1.0195	0.9890	0.9919	1.0039
36.000	1.0260	1.0193	0.9892	0.9920	1.0041
38.000	1.0261	1.0192	0.9893	0.9921	1.0043
40.000	1.0261	1.0191	0.9894	0.9922	1.0044
45.000	1.0262	1.0189	0.9896	0.9924	1.0048
50.000	1.0264	1.0187	0.9898	0.9926	1.0051
55.000	1.0265	1.0185	0.9899	0.9927	1.0054
60.000	1.0266	1.0184	0.9900	0.9929	1.0057
65.000	1.0267	1.0183	0.9901	0.9930	1.0059
70.000	1.0268	1.0182	0.9902	0.9930	1.0061
75.000	1.0269	1.0181	0.9903	0.9931	1.0063
80.000	1.0270	1.0181	0.9904	0.9931	1.0064
85.000	1.0271	1.0181	0.9904	0.9931	1.0065
90.000	1.0272	1.0181	0.9905	0.9931	1.0067
95.000	1.0272	1.0181	0.9905	0.9931	1.0067
100.000	1.0273	1.0181	0.9905	0.9931	1.0067
125.000	1.0273	1.0182	0.9906	0.9930	1.0067
150.000	1.0273	1.0182	0.9907	0.9929	1.0066
175.000	1.0274	1.0182	0.9907	0.9929	1.0067
200.000	1.0272	1.0181	0.9907	0.9930	1.0066

TABLE 12c. Tables of additional functions of the collision integrals for the (75,6) potential function

	Higher order corrections			Isotopic thermal diffusion ratios		
T^*	f_η	f_λ	$f_{\mathscr{D}}$	c.c.$_1$	Kihara$_1$	Kihara$_2$
.100	1.0019	1.0030	1.0020	.294	.299	.300
.150	1.0020	1.0031	1.0021	.298	.302	.304
.200	1.0021	1.0032	1.0021	.301	.305	.307
.250	1.0021	1.0033	1.0021	.302	.306	.308
.300	1.0022	1.0033	1.0021	.302	.306	.308
.350	1.0021	1.0033	1.0021	.300	.305	.307
.400	1.0020	1.0032	1.0021	.300	.304	.306
.450	1.0019	1.0030	1.0021	.300	.304	.306
.500	1.0019	1.0029	1.0021	.301	.306	.307
.550	1.0018	1.0028	1.0022	.304	.309	.309
.600	1.0017	1.0027	1.0023	.309	.314	.314
.650	1.0017	1.0027	1.0023	.314	.320	.319
.700	1.0017	1.0027	1.0025	.321	.328	.326
.750	1.0018	1.0027	1.0026	.330	.336	.334
.800	1.0018	1.0028	1.0027	.338	.346	.343
.850	1.0019	1.0029	1.0029	.348	.356	.352
.900	1.0019	1.0030	1.0030	.358	.366	.362
.950	1.0021	1.0032	1.0032	.368	.377	.372
1.000	1.0022	1.0034	1.0034	.378	.388	.382
1.100	1.0024	1.0038	1.0038	.399	.411	.404
1.200	1.0027	1.0042	1.0042	.420	.433	.425
1.300	1.0030	1.0047	1.0046	.440	.454	.446
1.400	1.0034	1.0053	1.0050	.459	.475	.466
1.500	1.0037	1.0058	1.0054	.477	.494	.485
1.600	1.0040	1.0063	1.0058	.495	.513	.504
1.700	1.0044	1.0068	1.0061	.511	.530	.521
1.800	1.0047	1.0073	1.0065	.526	.546	.537
1.900	1.0050	1.0078	1.0068	.540	.561	.552
2.000	1.0053	1.0082	1.0072	.553	.575	.566
2.200	1.0059	1.0091	1.0078	.577	.600	.592
2.400	1.0064	1.0099	1.0083	.598	.623	.615
2.600	1.0068	1.0106	1.0089	.616	.642	.636
2.800	1.0073	1.0113	1.0093	.632	.659	.653
3.000	1.0077	1.0120	1.0097	.645	.674	.669
3.200	1.0081	1.0126	1.0101	.658	.687	.682
3.400	1.0084	1.0131	1.0104	.669	.699	.695
3.600	1.0087	1.0136	1.0107	.679	.710	.707
3.800	1.0090	1.0141	1.0110	.688	.719	.717
4.000	1.0093	1.0145	1.0113	.696	.728	.727
4.500	1.0099	1.0154	1.0118	.713	.746	.747
5.000	1.0104	1.0162	1.0123	.727	.760	.762
5.500	1.0108	1.0168	1.0126	.737	.772	.775
6.000	1.0111	1.0173	1.0129	.746	.781	.786
6.500	1.0114	1.0177	1.0132	.754	.789	.795
7.000	1.0116	1.0180	1.0134	.760	.796	.802

TABLE 12c. Tables of additional functions of the collision integrals for the (75,6) potential function (Cont'd)

	Higher order corrections			Isotopic thermal diffusion ratios		
T^*	f_η	f_λ	$f_{\mathcal{D}\theta}$	c.c.$_1$	Kihara$_1$	Kihara$_2$
7.500	1.0118	1.0183	1.0136	.765	.802	.809
8.000	1.0119	1.0186	1.0138	.770	.807	.814
8.500	1.0121	1.0188	1.0139	.774	.811	.819
9.000	1.0122	1.0189	1.0141	.778	.815	.823
9.500	1.0123	1.0191	1.0142	.781	.818	.827
10.000	1.0124	1.0192	1.0143	.783	.821	.830
11.000	1.0125	1.0195	1.0144	.788	.826	.835
12.000	1.0126	1.0197	1.0146	.791	.830	.840
13.000	1.0128	1.0198	1.0147	.794	.833	.844
14.000	1.0128	1.0200	1.0148	.797	.836	.847
15.000	1.0129	1.0201	1.0149	.799	.838	.849
16.000	1.0130	1.0202	1.0150	.801	.840	.851
17.000	1.0130	1.0203	1.0150	.802	.841	.853
18.000	1.0131	1.0204	1.0151	.804	.843	.855
19.000	1.0131	1.0204	1.0151	.805	.844	.856
20.000	1.0132	1.0205	1.0152	.806	.845	.858
22.000	1.0132	1.0205	1.0152	.808	.847	.860
24.000	1.0133	1.0206	1.0153	.809	.849	.862
26.000	1.0133	1.0207	1.0153	.811	.850	.863
28.000	1.0133	1.0207	1.0154	.812	.851	.864
30.000	1.0133	1.0207	1.0154	.812	.852	.865
32.000	1.0134	1.0208	1.0154	.813	.853	.866
34.000	1.0134	1.0208	1.0155	.814	.854	.867
36.000	1.0134	1.0209	1.0155	.814	.854	.868
38.000	1.0134	1.0209	1.0155	.815	.855	.868
40.000	1.0135	1.0209	1.0155	.815	.855	.869
45.000	1.0135	1.0210	1.0156	.816	.856	.870
50.000	1.0135	1.0211	1.0156	.817	.857	.871
55.000	1.0136	1.0211	1.0156	.818	.858	.872
60.000	1.0136	1.0212	1.0157	.818	.859	.873
65.000	1.0136	1.0212	1.0157	.819	.859	.873
70.000	1.0136	1.0212	1.0157	.819	.859	.874
75.000	1.0137	1.0212	1.0157	.819	.860	.874
80.000	1.0137	1.0213	1.0157	.820	.860	.874
85.000	1.0137	1.0213	1.0157	.820	.860	.874
90.000	1.0137	1.0213	1.0158	.820	.860	.875
95.000	1.0137	1.0213	1.0158	.820	.861	.875
100.000	1.0137	1.0213	1.0158	.820	.861	.875
125.000	1.0136	1.0212	1.0158	.821	.861	.876
150.000	1.0136	1.0212	1.0158	.821	.862	.876
175.000	1.0136	1.0212	1.0158	.821	.862	.876
200.000	1.0136	1.0212	1.0158	.821	.862	.876

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13. ABSTRACT

Tables of collision integrals are presented for the (m, 6) potential function for 87 reduced temperatures for each of 10 values of m. The exponents m used were m = 9, 12, 15, 18, 21, 24, 30, 50, and 75. Comparisons are made with five other calculations for the case m = 12. The accuracy of the calculation appears to be at least several parts in 10,000.

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