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Institut für Angewandte Reaktorphysik
Institut für Neutronenphysik und Reaktortechnik

An Analysis of Twenty Four Isotopes for Use in Multiple Foil (Sandwich) Measurements of Neutron Spectra below 10 keV

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Recommended Resolved and Statistical Resonance Parameters for Twenty Four Isotopes

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Part A

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by

T.J. Connolly [*]
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Part B

Recommended Resolved and Statistical Resonance Parameters for Twenty Four Isotopes [1)]

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1) Work performed within the association in the field of fast reactors between the European Atomic Energy Community and Gesellschaft für Kernforschung mbH., Karlsruhe

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Part A

An Analysis of Twenty Four Isotopes for Use in Multiple Foil (Sandwich) Measurements of Neutron Spectra below 10keV

Introduction

The measurement of neutron spectra in nuclear reactors by the activiation of foils represents a tedious, indirect, and somewhat inelegant approach to the problem in comparison with more sophisticated methods such as time-of-flight, proton recoil counters, etc. Nevertheless, the advantages, realized or potential of foil measurements under certain conditions of neutron energy, spatial resolution requirements, accessability, etc., give incentive to the continued development of foil techniques. Among the methods which have been used is the multiple foil, or sandwich technique /1, 2/. This report gives the results of an analytical investigation of the characteristics of various isotopes as sandwich foil detectors in various spectra.

In the application of the sandwich technique a number of foils, usually three, of a given material are placed together and irradiated as a single foil. The thickness of the foils is chosen so that there is significant self shielding in one or more resonances. The difference in the activity between the inside and outside foils, therefore, can be attributed to those energy regions in which the cross sections are shielded. If these energy regions are well defined, as in resolved resonances, and if the value of self shielding can be computed with acceptable accuracy, then quantitative information about the flux at the energy regions in question is obtained. If a single resonance can be shown to provide the major portion of the activation difference, then the flux at the energy of that region is obtained directly. It is hardly necessary to add that in practice, a good deal of painstaking calibration is required to achieve this goal.

The position of multiple foil techniques among all activation techniques for spectrum measurements may be worth a few words. The basic problem is always one of the inference of the function $\phi(E)$ from a set of activation or reaction rate, R_k, measurements

$$R_k = \int_0^\infty \phi(E)\, \sigma_k(E)\, dE$$

The mathematical techniques for the calculation of $\phi(E)$, given a set of R_k and $\sigma_k(E)$ values or functions, has been the subject of considerable study (see, for example, /4/) and is not of immediate concern here. From the earliest work, certain experimental techniques have been employed to restrict the limits of the reaction integral and thus make easier the solution for $\phi(E)$ over the restricted range. Cadmium covers have been used to place an upper limit for thermal neutron reactions or a lower limit for epithermal neutron reactions. Likewise, in the higher energy regions, the use of threshold detectors permit setting $\sigma_k(E)=0$ for energies below the threshold energy and therefore serves to limit the range of the integral. The multiple foil technique serves a similar purpose in that it limits the region of integration to the region or regions of self shielding. If these regions are assumed to be closely centered about known resolved resonances, one may write

$$D_k = K_{k,1}\, \phi(E_{k,1}) + K_{k,2}\, \phi(E_{k,2}) + \ldots\ldots$$

where D_k expresses the difference in activation of two foils of material k in a multiple foil scheme. $E_{k,i}$ are the resonance energies of material k, and K_{ki} are factors related to self shielding and the particular multiple foil scheme followed.

Obviously, if there is significant self shielding in only a single resonance then the problem of interpreting the sandwich data is considerably simplified. As the contribution from other resonances becomes more appreciable the problem is more complex. Also, there arises a question as to the approach to the problem. One can regard the

contributions of other resonances as corrections to the contribution of the main resonance. These corrections may be estimated by calculations or by extrapolation or interpolation of measurements with other isotopes. As the contribution from two or more resonances becomes of the same order, it would seem in theory at least that one should treat each contribution in some rational weighting process using the data from a set of different materials and/or different foil thicknesses to obtain $\phi(E)$ in an unfolding scheme. The difficulties in the application of such schemes due to uncertainties in measurements, resonance parameters, self shielding calculations, etc., are well known. It is intended that the information provided in this report will make possible an assessment of the problem in individual cases.

To date, multiple foil techniques have been applied mainly to neutron spectra in which $\phi(E)$ follows closely a $1/E$ dependency /6/ Weitzberg /5/ however, has used the technique in two fast reactors in which $\phi(E)$ deviated strongly from $1/E$. In the most common type of fast reactor (or fast critical assembly), namely, a sodium-cooled,metal or oxide fueled reactor, multiple foil schemes are not very attractive because such a small fraction of the activation takes place in the resolved resonance region, i.e. between 1 eV and a few ke V. A principal reason for this study is that the steam-cooled reactor under investigation at the Kernforschungszentrum Karlsruhe has a significantly softer spectrum than liquid-metal-cooled fast reactors. In this spectrum, the fraction of activation of various isotopes in the resolved resonance region is greatly increased and, therefore, the possibility of obtaining spectral information from multiple foil techniques is enhanced.

The effectiveness of a given isotope as a spectral indicator depends primarily on three factors:

1. The activity produced in the irradiation site of interest must be high enough to keep statistical uncertainties to an acceptably low value. This activity is a function of so many experimental conditions that it is very difficult to generalize. For the

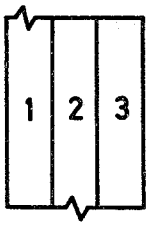
24 isotopes investigated, the relative neutron capture rate in various spectra has been calculated. These values will permit an estimate of count rates to be expected in a specific set of experimental conditions if the count rate of one of these isotopes has been measured or computed.

2. The difference in activation of two foils in a multiple foil scheme must be large enough to permit an accurate measurement. This quantity is a function of the resonance parameters of the isotope, the neutron spectrum, and the details of the multiple foil scheme used. Calculated values of the activation difference, as a fraction of the activation of one foil, are given for the 24 isotopes investigated for a wide range of spectra and multiple foil schemes.

3. The difference in activation of two foils in a multiple foil scheme must be attributable in a quantitative way to definite resonances. The simplest case is that of a single predominant resonance, a situation which occurs in several isotopes in a 1/E spectrum. As the spectrum becomes harder, however, this situation changes markedly. For the 24 isotopes studied, calculated contribution to activation differences by resonance is given for a range of spectra and multiple foil schemes.

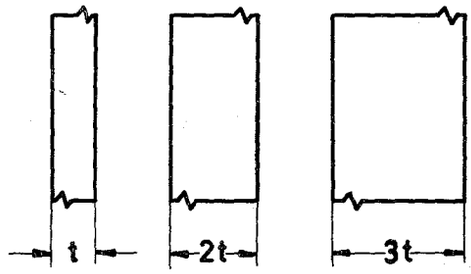
Analysis of Sandwich Foil Measurements

In order to obtain a value of $\phi(E)$ from a sandwich foil measurement, it is necessary to be able to calculate the activation, and, therefore, the self shielding in the different foils of the sandwich. Consider first a three-foil sandwich



with foils each of thickness, t. We idealize the sandwich as an infinite slab embedded in a uniform flux field. We number the foils from the left and designate the specific capture rates R(1,3), R(2,3), and R(3,3) for the first, second, and third foil, respectively, of a three-foil sandwich.

Now, also consider three separate foils with thicknesses as shown:



We designate the specific capture in these foils as R(t), R(2t), and R(3t). The capture rate in any foil can be represented as the superposition of the reaction rates due to neutrons from the left and the right. For example

$$R(t) = \int_0^t \sigma_\gamma \ \phi_1 (x)\, dx + \int_0^t \sigma_\gamma \ \phi_r (t-x)\, dx.$$

We will further assume that the magnitude, as well as energy and angular distribution, is the same from the left and the right. (An actual difference in magnitude presents no particular problem in this analysis, however.) Then,

$$R(t) = 2 \int_0^t \sigma_\gamma \ \phi_1 (x)\, dx.$$

In the foil of thickness 2t,

$$R(2t) = \int_0^{2t} \sigma_\gamma \ \phi (x)\, dx = \int_0^t \sigma_\gamma \ \phi (x)\, dx + \int_t^{2t} \sigma_\gamma \ \phi (x)\, dx,$$

and, for the foil of thickness 3t

$$R(3t) = \frac{2}{3} \int_0^t \sigma_\gamma \phi (x)\, dx + \frac{2}{3} \int_t^{2t} \sigma_\gamma \ \phi (x)\, dx + \frac{2}{3} \int_{2t}^{3t} \sigma_\gamma \ \phi (x)\, dx,$$

where a directional subscript 1 has been left off the flux. This same analysis can also be applied to the different layers of a sandwich foil. Thus,

$$R(1,3) = \int_0^t \sigma_\gamma \, \phi\,(x)\, dx + \int_{2t}^{3t} \sigma_\gamma \, \phi \quad (x)\, dx$$

$$R(2,3) = 2 \int_t^{2t} \sigma_\gamma \phi\,(x)\, dx.$$

These integrals, however, are related to the specific reaction rate in single foils. That is,

$$\int_0^t \sigma_\gamma \, \phi\,(x)\, dx = \frac{1}{2} R\,(t)$$

$$\int_t^{2t} \sigma_\gamma \, \phi\,(x)\, dx = R\,(2t) - \frac{1}{2} R\,(t)$$

$$\int_{2t}^{3t} \sigma_\gamma \, \phi\,(x)\, dx = \frac{3}{2} R\,(3t) - R\,(2t),$$

so that,

$$R(1,3) = \frac{3}{2} R(3t) + \frac{R(t)}{2} - R(2t)$$

$$R(2,3) = 2\,R(2t) - R(t).$$

The difference in the activation of two foils we designate

$D(k,l,m,n) \equiv$ the difference in specific activity of the Kth foil of an L-foil sandwich and the Mth foil of an N-foil sandwich.

Accordingly, in the 3-foil sandwich under consideration,

$$D(1323) = \frac{3}{2}\left[R(3t) - 2\,R(2t) + R(t)\right].$$

It is important to recall that all R values are specific reaction rates. Ehret /1/ used a similar relationship in his work.

This analysis, which can easily be extended to any k, l, m, n set, forms the basis of the calculations in this paper. It contains an assumption which is important to understand. This assumption is that the activation caused by neutrons impinging from a given side at a given distance from that side is not affected by the total thickness of the foil. In other words, a quantity such as

$$\int_{t}^{2t} \sigma_{\gamma}\, \phi\,(x)\, dx$$

is independent of whether there is or is not foil material at $x > 2t$. It is not simple to evaluate the error introduced by this assumption. One can say that in resonances where the "narrow resonance" (NR) approximation is accurate, this assumption is also valid, since neutrons would have to be back scattered in order to invalidate the assumption. In the NR approximation, a scatter removes the neutron from the resonance. It is in theory, at least, possible for the experimenter to check the validity of the assumption by measuring the quantities on both sides of the above equation.

The above relationship for the difference between the outer and inner foil of a three-foil sandwich may be generalized. We can write

$$D(k,l,m,n) = \frac{1}{2}\left(B'_k + B'_{l-k+1} - B'_m - B'_{n-m+1}\right)$$

where

$$B'_n = n\,R(nt) - (n-1)\,R\left((n-1)t\right).$$

$R(nt)$ is the specific activation of a single foil of thickness nt. Each foil in the sandwich in question has a thickness t. This equation can be used to calculate the difference in activation between any foil of any sandwich and any other foil of the same or different

sandwich. For example, the difference between activation of the inner and outer foils of a 5-foil sandwich is

$$D(1535) = \frac{1}{2}\,(B'_1 + B'_5 - 2\,B'_3)$$

$$B'_1 = R(t)$$
$$B'_5 = 5R(5t) - 4R(4t)$$
$$B'_3 = 3R(3t) - 2R(2t)$$

$$D(1535) = 5R(5t) - 4R(4t) - 6R(3t) + 4R(2t) + R(t).$$

Two different sandwiches can be compared. For example, the difference between the activation of a single foil and the center foil of a 5-foil sandwich is

$$D(1135) = \frac{1}{2}\,(2B'_1 - 2B'_3) = B'_1 - B'_3$$

$$D(1135) = R(t) + 2\,R(2t) - 3\,R(3t).$$

Reaction Rate Calculations

We next turn our attention to the calculation of the specific activation rate. This rate may be represented as the sum of shielded and unshielded terms.

$$R(nt) = \sum_i I_i\,(nt)\,E_i\,\phi\,(E_i) + R_u.$$

Since, by definition, the unshielded term, R_u, is not a function of n, it will disappear in the difference calculations. $I_i\,(nt)$ is the effective capture integral of the ith resonance centered at E_i. The effective resonance integral is

$$I_i = (I_i/I_i^{\infty})\,I_i^{\infty}$$

where I_i^{∞} is defined in the usual way as the integration of the Breit Wigner cross section equation over all energy.

$$I_i^{\infty} = \int_{-\infty}^{\infty} \sigma_{BW}(E)\,\frac{dE}{E}$$

$$= \frac{\pi}{2}\,\frac{\Gamma_{\gamma,i}\,\sigma_{o,i}}{E_i}$$

$$\sigma_{o,i} = 2{,}6 \times 10^{6}\; g\,\frac{\Gamma_n/\Gamma}{E_i}\,.$$

Because the resonance integral is traditionally defined on the basis of a 1/E spectrum, it is necessary to multiply I_i by E_i to obtain the specific reaction rate due to the ith resonance. In these calculations it is assumed that all the capture in a given resonance takes place at E_i and, therefore, is a measure of $\phi(E_i)$. Due to the finite width of resonances, however, this assumption means that the values have a resolution which varies with the resonance in question.

The equation for the difference in activation of two foils is now written somewhat differently,

$$D(k,l,m,n) = \frac{N_a}{\rho_a}\sum_i K_i\,(k,l,m,n)\,\phi\,(E_i)$$

where

$$K_i\,(k,l,m,n) = \frac{1}{2}\,(B_{k,i} + B_{l-k+1,i} - B_{m,i} - B_{n-m+1,i})$$

$$B_{n,i} = \left[n\,I_i\,(nt) - (n-1)\,I_i\,((n-1)t)\right] E_i,$$

and N_a and ρ_a are the number density and density, respectively, of the absorbing isotope.

In the analysis of a sandwich foil measurement, this is the fundamental equation. The flux at E_j is obtained from the equation

$$\phi\,(E_j) = \frac{D\rho_a/N_a - \sum_{i\neq j} K_i\,\phi\,(E_i)}{K_j}\,.$$

One sees that it is necessary to know the contributions from the other resonances. Obviously, the accuracy required depends on the relative magnitude of the different terms. In the limiting case of a single resonance then the term representing the other resonances is zero. K_i values must be determined by calculation or calibration or a combination of these two.

It is of obvious importance that the experimentally determined quantity, D, be measured to an acceptable accuracy. A problem may arise in that D may be the difference of two large numbers, i.e., the specific activity of the two foils in question. Even though the standard deviation of the activity of each of these foils may be low, the standard deviation of D may be high. An evaluation of a given foil isotope in a given situation requires, therefore, the prediction of the magnitude of the activation difference, D, as a fraction of the activity of a single foil. For this purpose we define

$$\delta(k,l,m,n) = \frac{D(k,l,m,n)}{R(m,n)} .$$

The standard deviation of D may be expressed as a function of this quantity and the number of counts collected in measuring the activity of foil m.

100δ (%)	Counts per foil	Std.Dev. $100\sigma_D/D$ (%)	100δ (%)	Counts per foil	Std.Dev. $100\sigma_D/D$ (%)
2	10^4	71,4	20	10^4	7,8
	10^5	22,6		10^5	2,5
	10^6	7,1		10^6	0,8
5	10^4	29,0	50	10^4	3,6
	10^5	9,2		10^5	1,1
	10^6	2,9		10^6	0,4
10	10^4	14,9	100	10^4	2,2
	10^5	4,7		10^5	0,7
	10^6	1,5		10^6	0,2

The magnitude of δ for various isotopes over a wide range of experimental conditions is given in the results.

Resonance Integral Calculations

All of the resonance integral calculations in this work were performed using the TRIX /11/ program obtained from Atomics International. It was considerably revised to adapt it to the multiple foil calculations. The calculation for foils is based on an equivalence relationship using an improved escape probability relationship . In all cases an option employing an intermediate resonance calculation technique of Goldstein and Cohen /12/ was used. Doppler broadening at 300°K was also included in the calculations. The results of the resonance integral calculations for each resonance of each isotope and for several foil thicknesses are given in Table A-IX.

Spectra

The spectrum itself has a very strong effect on the accuracy with which the flux at one or more energy values can be determined by the use of a given isotope. On the one hand is the 1/E spectrum which usually weights the lowest lying resonance so heavily that only information at that energy is obtained. Harder spectra, on the other hand, tend to distribute the activation among resonances more evenly; at the same time, the resonance activation and, therefore, self shielding tends to decline, resulting in smaller differences between foil activities.

In making this survey it was desirable to show these effects in a systematic way. The calculated spectra for two loadings of SNEAK (Schnelle Null-Energie Anordnung Karlsruhe) were used as the basis for calculations. SN1 is a hard spectrum representative of a liquid-metal-cooled fast reactor. SN3 is a softer spectrum representing a steam-cooled fast reactor containing 35 vol.% of 0.07 gm/cm^3 H_2O. Calculations were made for three additional idealized spectra, identified as A=-1, A=0, and A=+1. These spectra are identical to SN3 down to about 100 keV, at which point $\phi(E)$ is given an E^A dependency. A=-1 corresponds to a thermal reactor, therefore, except that no Maxwellian component is

added at lower energies. Although these spectra have no common normalization, this fact has no bearing on the calculations that are made. The group fluxes for each of these five spectra are given in Table A-IV. It is well recognized that actual fast reactor spectra show strong local (in energy) variations and do not follow a simple E^A rule. For the purpose of preliminary evaluation of various isotopes in multiple foil schemes, however, this generalization appears justified and useful.

Results

Table A-I summarizes some properties of the isotopes for which calculations were made and also certain postulated conditions on which the calculations were based. Among these are the atom density and the potential scattering cross section of the foil materials. The atom density, N_a, and the foil thickness in centimeters, which appear in later tables, determine unambiguously the foil "thickness" in each calculation. The potential scattering in barns per absorber atom is also a property of the foil material. Contributing to this value are the potentail scattering cross section values of the isotope itself, of the other isotopes of the element, and of any other elements present in the foil material (e.g., fluorine in the case of crystalline NaF in sodium activation measurements). In most cases the postulated foil material was the element in metallic form. In three cases, Na23, Mn55, and Br81, the form indicated in Table A-I is one which experience has indicated to be more practicable for foil work than the pure element. In certain other cases, no specific form was postulated; the density value selected was some arbitrary fraction of the handbook elemental density value.

Tables A-II and A-III present some calculational results which are incidental to the main objective but which may be of some interest. Table A-II gives the contribution to the 2200 m/sec capture cross section from all of the resolved resonances as computed from the resonance parameters. (Note: the values of resonance parameters used in this study are given and discussed in Section B of this report.) The contributions

from negative energy resonances were not computed, a fact which undoubtedly accounts for some of the discrepancies between the computed values and experimental values obtained from various literature sources.

Table A-III gives the infinite dilution capture resonance integrals as computed from the resonance parameters according to the equation

$$I^{\infty} = \sum_i 2\pi \lambda^2 g_{J,i} \frac{\Gamma_{\gamma,i} \Gamma_{n,i}}{E_i \Gamma_i} .$$

The 1/v component was computed from the 2200 m/sec capture cross section (i.e., the "literature" value of Table A-II) by the expression

$$I^{\infty}_{1/v} = 2\sqrt{0.0253} \left[\frac{1}{\sqrt{\check{E}}} - \frac{1}{\sqrt{\hat{E}}} \right] \sigma_{2200}.$$

The comparison of these values with various values reported in the literature reveals some interesting discrepancies. It should be pointed out that the comparison is not necessarily between independent quantities, since some of the literature values are calculated and also because selection of resonance parameters, specifically capture widths, is sometimes influenced by the measured value of the capture resonance integrals.

Table A-IV gives the group fluxes which were used in the calculations. They represent various spectra as already discussed. Table A-V gives the relative neutron capture rate, per atom of isotope, for most of the isotopes in this study. In each case the value shown was calculated by the equation

$$\text{Relative capture rate} = \sum_{g=1}^{24} \varphi^g \sigma_{\gamma}^g,$$

where the group fluxes are those given in Table A-IV. In groups whose energy ranges were below the "Upper Energy" of Table A-I, the cross sections were calculated as an extension of the effective resolved and unresolved resonance integral calculations by means of the TRIX-1 Code /11/. In higher energy groups the cross sections were obtained from a variety of references, primarily from Goldberg, et al. /14/. For the transformation of the individual resonance integrals to cross section, an intra-group spectrum is needed. In the case of SN1 and SN3 spectra, the intra-group fluxes were obtained from a simple interpolation of group fluxes.

In the case of the E^A spectra, the intra-group fluxes were assumed to follow the same rule as the group fluxes.

The purpose of presenting the relative reaction rates is to facilitate estimates of activation, i.e., disintegration or counting rates, which can be achieved in any given experimental arrangement. There are isotopes whose other sandwich foil properties may be excellent, but whose activation in a given situation may be too low to permit acquisition of adequate counting data. Since the flux values given in Table A-IV are not related to any physically meaningful quantity, such as power, additional information is needed in order to obtain an absolute reaction rate. Alternatively, the activation of one isotope in a given facility could be measured and then the activation of other isotopes estimated from the relative reaction rate. Obviously, many other factors such as isotope half-life, irradiation and counting schedule, counting efficiency, etc., must be included in any estimate of activation.

The principal results of this work are presented in Tables A-VI-1 to 24 and Tables A-VII-1 to 24. The A-VI tables give the predicted magnitude of the difference between designated foils of a sandwich, and the A-VII tables give a breakdown of the contribution of different resonances or resonance groups to the difference give in the corresponding A-VI tables. The activation difference, δ , is defined as the difference in activation between the two foils in question divided by the activation of the one of lower activity. This quantity is equivalent to a signal-to-noise ratio for these measurements. Its value is closely related to the experimental uncertainty to be expected in a given experiment, as indicated in a previous section.

One of the principal independent variables of the A-VI and A-VII tables is the "Sandwich Type". This designation refers to the large number of possible combinations in terms of foils per sandwich and the particular foils compared. A given combination has a designation, klmn, to indicate that the comparison is between the k^{th} foil (numbering left to right) of an 1-foil sandwich and the m^{th} foil of an n-foil sandwich. The designation 1123, for example, refers to the activation difference between a foil irradiated singly and the inner foil of a 3-foil sandwich.

The designation 1535 refers to the difference between the outer and center foils of a 5-foil sandwich. Sandwiches of the 1123 and 1135 type do imply an experimental procedure in which two independent irradiations are performed with the attendant need for normalization of the time, position, and power level of the irradiation. In the cases of Se80 and Ir191, no Table A-VI is given because no cross sections for the first nine groups were found.

The A-VII tables give the contribution to the activation difference from one or more individual resolved resonances, from all other resolved resonances as a group, and from unresolved resonances. These values are intended to show the extent to which the activation difference is caused by a single resonance, and, therefore, identifiable with the neutron flux in that narrow energy band. The results given in the A-VII tables are limited to the sandwich types 1123 and 1323. It was observed that there was little difference in the distributions between the 1123, 1135, and 1147 cases and between the 1323 and 1535 cases. No distribution among resolved resonances was calculated for the SN1 spectrum, primarily because the activation in self-shielded resolved resonances is so low.

Table A-VIII presents some comparisons of effective resonance integrals as computed using different approximations. The approximations relate to the energy change of the neutron on scattering with foil nuclei. In the narrow resonance (NR) approximation, it is assumed that such a scattering removes the neutron from the resonance energy band; in the IM approximation, it is assumed that no energy change takes place; in the intermediate (IR) cases, as the name implies, allowance is made for energy degradation which leaves the neutron within the resonance band /12/. The information of Table A-VIII is presented in order to give some guidance to the individual who may wish to make more refined calculations of capture in different foils of a sandwich.

Table A-IX gives the summary of all effective resonance integral calculations made in this study, both by isotope and by resonance. It is hoped that the presentation of these basic results will facilitate calculations for experimental conditions not considered in this work.

Conclusions

For the most part, the numerical results show the trends which one expects. As the spectrum hardens, there is a marked decrease in the signal, δ, and in the selectivity of the signal for one or a few resonances. It does appear, however, that in the spectrum of a steam-cooled fast reactor there are several isotopes which will yield spectral information via the sandwich foil technique.

In the few cases in which experimental data available in the literature can be compared with these calculations, the agreement is rather good. The calculations of δ for In115, La139, W186, and Au197 in three-foil sandwiches agree well with the data of Ehret /1/. The comparison is between the values of δ for sandwich type 1323 in the A = -1 spectrum, and the ratio of outer to inner foil activity, $1 + \delta$, plotted in Reference 1. The dependency of δ on foil thickness is also in agreement. In the case of Mn55, however, there is a significant discrepancy between the δ values given in Table A-VI-3 and the corresponding values, both measured and computed, of Ehret. For example, Table A-VI-3 shows a δ value of 0.047 for a three-foil sandwich of 0.0125 cm manganese foils. Ehret /1/ shows a corresponding value of about 0.12. There is undoubtedly some difference in the manganese density values used, but hardly enough to explain this difference. The difference in calculated values can be explained by the difference in the NR approximation, used by Ehret, and the IR approximation used here. An independent calculation of the effective resonance integral of the manganese foils using the ZUT code confirmed the IR results obtained here, i.e., the values of Table A-IX for Mn55. Consequently, the discrepancy between the experimental values of Ehret and the values calculated in this work is unexplained.

McCracken /6/ reports some preliminary measurements of δ in a 1/E spectrum for Cu63, Cs133, and Sm152, which can be compared with values in the A-VI tables as follows:

	McCracken /6/			This work		
Isotope	Thick. (cm)	No.Density x 10^{-24} (nuclei/cm^3)	100 δ (%)	Thick. (cm)	No.Density x 10^{-24} (nuclei/cm^3)	100 δ (%)
Cu63	0.0125	0.06	7	0.01	0.06	6
Cs133	0.05	0.013	26	0.05	0.01	33
Sm152	0.025	0.008	176	0.0125	0.008	40

The values of δ are for the inner and outer foils of a three-foil sandwich. The number density values attributed to the materials of Reference 6 are inferred, not quoted. The agreement in the cases of Cu63 and Cs133 is satisfactory; in the case of Sm152, it is poor.

The information in the A-VI tables indicates very clearly a large gain in activation differenc, or response, which can be obtained by comparing the inner foil of a sandwich with a single foil irradiated separately rather than with the outer foil of the same sandwich. This gain can only be obtained at the expense of the additional experimental complexity needed to normalize the two separate irradiations to a common irradiation time, flux level, and site.

The data in Tables A-VI and A-VII indicate that there is a considerable potential for the acquisition of spectral information via the sandwich technique, at least in neutron spectra in which a significant portion of the neutron population has energies below 10 keV. There is no question, however, that a large amount of development of technique is necessary to realize this potential in the case of each isotope. There is also an unanswered problem of the isomeric ratio in individual resonances for several of the isotopes evaluated here. The answer to several of these developmental problems may lie in calibration measurements made in neutron fluxes whose spectra are measured by independent means. These spectra should be considerably harder than the readily available 1/E spectrum, because the latter weights the lowest energy resonance too heavily.

Table A-I

ISOTOPE AND FOIL PROPERTIES AND CALCULATION CONDITIONS

			Foil Properties			
Isotope	Abundance (%)	(n,γ) Activity Half-Life*	Phys/Chem Form	Abs.Density $N_a \times 10^{-24}$ (nuclei/cm^3)	Pot.Scat Σ_p/N_a (barns)	Upper Energy** (keV)
Na23	100	15,0hr	NaF	0,04	3,8	100
V51	99,8	3,8min	Metal	0,0705	2,5	200
Mn55	100	2,58hr	12%Ni	0,0714	5,8	200
Co59	100	10,4min	Metal	0,089	6,5	100
Cu63	69,1	12,8hr	Metal	0,05865	9,7	100
Ga71	39,6	14,2hr	Metal	0,02	16,2	100
As75	100	26,8hr	-	0,03	6,2	100
Se80	49,8	18 min	-	0,01	12,0	100
Br81	49,5	35,9hr	KBr	0,00688	16,0	100
Mo98	23,8	66 hr	Metal	0,01525	22,7	100
Mo100	9,62	14,3min	Metal	0,006175	56,0	100
Rh103	100	4,4min	Metal	0,0726	5,1	100
Pd108	26,7	13,6hr	Metal	0,0184	18,0	100
Cd114	28,9	55 hr	Metal	0,01337	15,6	100
In115	95,7	54 min	Metal	0,0366	11,1	100
Sb121	57,2	2,8day	-	0,0176	7,3	100
Cs133	100	3,2 hr	-	0,01	3,5	100
La139	99,9	40 hr	Metal	0,02668	3,2	46,5
Sm152	26,6	47 hr	-	0,008	13,1	100
W186	28,4	24 hr	Metal	0,018	39,0	46,5
Re187	62,9	17 hr	Metal	0,06	17,5	100
Ir191	37,3	74 day	Metal	0,0292	29,0	100
Pt198	7,2	30 min	Metal	0,00476	148,0	100
Au197	100	65 hr	Metal	0,05904	10,8	100

* Activity regarded as most likely to be measured. Capture rate calculations included production of all isomers, however.

** Upper energy limit used in calculation of resonance integrals and resonance self-shielding.

Table A-II

CAPTURE CROSS SECTION (2200m/sec) COMPUTED FROM RESONANCE PARAMETERS

	σ_γ (barns)			σ_γ (barns)	
Isotope	Computed	Literature	Isotope	Computed	Literature
Na23	0,499	0,536	Pd108	6,9	12,3
V51	1,20	4,90	Cd114	0,36	0,30
Mn55	11,4	13,3	In115	203,0	199,0
Co59	27,4	37,2	Sb121	5,77	6,56
Cu63	0,49	4,5	Cs133	16,2	31,6
Ga71	5,4	5,0	La139	0,16	8,2
As75	2,6	4,3	Sm152	102,5	224,0
Se80	0,38	0,61	W186	38,3	35,0
Br81	1,9	6,1	Re187	2,5	66,0
Mo98	0,29	0,15	Ir191	321,0	960,0
Mo100	0,37	0,20	Pt198	2,3	4,0
Rh103	144,0	150,0	Au197	95,6	98,8

Table A-III

INFINITE DILUTION CAPTURE RESONANCE INTEGRALS COMPUTED FROM RESONANCE PARAMETERS

I^{∞}, Infinite Dilution Integral (barns)

Isotope	Lowest Energy Res.	All Resol. Res.	Unresolved l=0	Unresolved l=1	Total ex 1/v	Lit.Value ex 1/v	Ref.	1/v*	Total inc 1/v	Lit. Value inc 1/v	Ref.
Na23	0,07	0,07	-	-	0,07	0,07		0,23	0,30	0,34	
V51	0,07	0,11	0,0	0,03	0,14	0,46	8	2,08	2,22	2,15	8
Mn55	7,37	8,59	0,0	0,04	8,63	7,55	8	5,70	14,3	15,0	7
Co59	54,84	54,73	-	-	54,73	55,2	7	15,96	70,7	71,0	9
Cu63	2,59	3,24	0,01	0,07	3,32	3,13	7	1,89	5,21	4,85	7
Ga71	12,53	27,24	3,67	0,13	31,0	-		2,04	33,0	21,6	7
As75	33,4	54,8	0,3	0,2	55,3	-		1,8	57,1	40,3	7
Se80	0,26	0,38	0,02	0,07	0,47	-		0,26	0,73	-	
Br81	24,94	39,61	25,64	0,34	65,6	-		2,61	68,2	-	
Mo98	2,00	7,68	0,42	0,82	8,9	10,3	7	0,06	9,0	8,2	7
Mo100	0,24	6,69	0,72	0,43	7,8	4,1	7	0,08	7,9	3,9	7
Rh103	969,0	992,0	4,3	0,5	997,0	-		64,0	1061,0	1106,0	9
Pd108	2,4	207,6	29,3	0,7	237,6	-		5,2	242,8	-	
Cd114	9,7	14,9	1,8	0,5	17,2	-		0,1	17,3	23,3	14
In115	3070,0	3170,0	26,0	0,0	3196,0	-		87,0	3283,0	3450,0	7
Sb121	102,7	189,5	20,4	0,4	210,3	-		2,8	213,1	143,	7
Cs133	293,5	366,0	1,6	0,3	367,9	453,0	7	13,6	381,5	497,0	7
La139	9,08	9,08	10,47	0,12	19,67	-		3,52	23,2	14,1	7
Sm152	2113,0	2113,0	192,0	0,0	2305,0	3100,0	7	96,0	2401,0	3175,0	7
W186	513,5	525,6	1,1	0,4	527,	476,0	7	15,0	542,0	476,0	7
Re187	39,8	146,7	42,5	0,4	189,6	-		28,3	218,0	288,0	7
Ir191	2980,	3510,0**	138,0	0,0	3648,0	-		-	-	-	
Pt198	38,0	45,5	10,0	0,6	56,1	-		1,7	57,8	-	
Au197	1478,0	1540,0	7,7	0,3	1548,0			42,0	1590,0	1550,0	7

*Cutoff = 0,55 eV

Table A-IV

GROUP FLUXES IN SPECTRA USED IN CALCULATIONS

Group No.	Min. Energy (eV)	Group Flux (arb. units)				
				Spectrum Designation		
		SN1	SN3	A=-1	A=0	A=+1
1	6,5 x 10^6	1,294	1.326	1,326	1,326	1,326
2	4,0 "	7,97	7.336	7,336	7,336	7,336
3	2,5 "	14,82	16.98	16,98	16,98	16,98
4	1,4 "	28,9	34.54	34,54	34,54	34,54
5	0,8 "	54,6	48.94	48,94	48,94	48,94
6	0,4 "	105,5	82.23	82,23	82,23	82,23
7	0,2 "	104,2	75.83	75,83	75,83	75,83
8	0,1 "	69,4	58.91	58,91	58,91	58,91
9	46 500	44,28	44.28	44,28	44,28	44,28
10	21 500	17,92	30.85	30,85	20,70	9,64
11	10 000	7,88	22.48	22,48	9,51	2,05
12	4 650	1,4	17.95	22,48	4,428	0,4428
13	2 150	0,336	13.65	22,48	2,07	0,0964
14	1 000	0,0537	10.46	22,48	0,951	0,0205
15	465	$5,85 \times 10^{-3}$	6.760	22,48	0,4428	$4,428 \times 10^{-3}$
16	215	$5,75 \times 10^{-4}$	4.337	22,48	0,207	$9,64 \times 10^{-4}$
17	100	$4,11 \times 10^{-5}$	2.441	22,48	0,0951	$2,05 \times 10^{-4}$
18	46,5	$2,39 \times 10^{-6}$	1.067	22,48	0,04428	$4,428 \times 10^{-5}$
19	21,5	$9,7 \times 10^{-8}$	0.644	22,48	0,0207	$9,64 \times 10^{-6}$
20	10	$3,17 \times 10^{-9}$	0.186	22,48	$9,5 \times 10^{-3}$	$2,05 \times 10^{-6}$
21	4,65	$6,6 \times 10^{-11}$	0.1009	22,48	$4,428 \times 10^{-3}$	$4,428 \times 10^{-7}$
22	2,15	$9,59 \times 10^{-12}$	0.1620	22,48	$2,07 \times 10^{-3}$	$9,64 \times 10^{-8}$
23	1,0	$6,35 \times 10^{-13}$	0.0388	22,48	$9,51 \times 10^{-4}$	$2,05 \times 10^{-8}$
24	0,465	$2,52 \times 10^{-14}$	0.01258	22,48	$4,428 \times 10^{-4}$	$4,428 \times 10^{-9}$
25	0,215	$4,13 \times 10^{-16}$	8.36×10^{-4}	22,48	$2,07 \times 10^{-4}$	$9,64 \times 10^{-10}$

Table A-V

RELATIVE CAPTURE RATE OF DIFFERENT ISOTOPES

Isotope	Foil Thickness (cm)	(mils)	Capture Rate per Atom (arb. units) Spectrum SN1	SN3	A=-1	A=0	A=+1
Na23	0,0125	5	0,30	1,55	6,31	0,43	0,24
V51	0,05	20	2,00	5,48	69,2	2,24	1,43
Mn55	0,0025	1	3,91	59,5	403,5	7,07	2,90
Co59	0,0025	1	6,92	120,0	1410,0	11,08	5,39
Cu63	0,0025	1	11,29	39,5	139,0	12,67	9,08
Ga71	0,025	10	20,5	131,2	741,0	26,6	15,2
As75	0,005	2	58,9	233,3	1232,0	67,5	42,8
Se80			-	-	-	-	-
Br81	0,05	20	55,1	303,3	1241,0	70,4	40,7
Mo98	0,0025	1	25,3	73,2	222,7	26,2	19,2
Mo100	0,02	8	12,6	61,0	191,2	14,9	9,5
Rh103	0,0025	1	107,4	285,1	14130,0	106,1	83,8
Pd108	0,0125	5	65,5	290,2	3057,0	75,2	49,4
Gd114	0,03	12	29,8	107,9	335,0	35,1	21,8
In115	0,005	0,2	131,9	446,0	60950,0	134,8	104,4
Sb121	0,0125	5	78,2	324,4	4430,0	90,6	59,7
Cs133	0,005	2	66,4	304,0	8393,0	75,2	50,6
La139	0,005	2	6,43	32,1	364,7	7,93	4,70
Sm152	0,0075	3	46,4	327,6	24420,0	58,6	34,6
W186	0,0025	1	47,9	247,4	11311,0	56,7	35,9
Re187	0,0025	1	225,8	591,6	5590,0	236,1	168,7
Ir191			-	-	-	-	-
Pt198	0,025	10	76,3	239,3	1360,0	79,2	58,4
Au197	0,0005	0,2	105,5	563,4	28250,0	122,9	80,8

Note: The relative numbers given the same isotope in different spectra have no quantitative significance.

Table A-VI-1

MAGNITUDE OF ACTIVATION DIFFERENCE

SODIUM 23

Single Foil Thickness (cm)	(mils)	Sandwich Type	100∫(%) Spectrum SN1	SN3	A=-1	A=0	A=+1
0,0125	5	1123	1,3	5,8	2,2	3,5	1,0
		1323	0,2	0,9	0,3	0,5	0,1
		1135	2,4	10,2	3,8	6,2	1,8
		1535	0,4	2,0	0,7	1,1	0,3
		1147	3,3	14,1	5,1	8,4	2,5
0,05	20	1123	3,2	14,0	4,8	8,3	2,6
		1323	0,6	2,8	1,0	1,6	0,4
		1135	5,5	24,3	7,8	14,0	4,5

Table A-VII-1

DISTRIBUTION OF ACTIVATION DIFFERENCE BY RESONANCE

SODIUM 23

Single Foil Thickness (cm)	(mils)	Sandwich Type	E_i (eV)	Contribution to δ (%) Spectrum SN1	SN3	A=-1	A=0	A=+1
0,0125	5	1123	2850		97,4	99,1	85,7	22,7
			34000		0,8	0,3	3,4	10,6
			54100*		1,1	0,4	6,4	32,2
			Others		0,7	0,2	4,5	34,5
			Unres.	-	-	-	-	-
		1323	2850		98,3	99,5	89,3	27,5
			34000		0,4	0,2	2,0	7,3
			54100*		0,7	0,2	4,0	23,2
			Others		0,6	0,1	4,7	42,0
			Unres.	-	-	-	-	-
0,05	20	1123	2850		96,7	98,8	82,5	19,1
			34000		1,0	0,4	4,0	11,2
			54100*		1,4	0,5	7,7	34,2
			Others		0,9	0,3	5,8	35,5
			Unres.	-	-	-	-	-
		1323	2850		97,5	99,1	86,4	24,8
			34000		0,8	0,3	3,4	11,6
			54100*		1,2	0,4	6,6	36,2
			Others		0,5	0,2	3,6	27,4
			Unres.	-	-	-	-	-

*Including both the 54,1 and 55,0 keV resonances

Table A-VI-2

MAGNITUDE OF ACTIVATION DIFFERENCE

VANADIUM - 51

Single Foil Thickness (cm)	(mils)	Sandwich Type	100δ(%) Spectrum SN1	SN3	A=-1	A=0	A=+1
0,05	20	1123	4,0	4,7	0,5	4,5	3,4
		1323	0,6	0,6	0,1	0,6	0,5
		1135	7,0	8,4	0,8	8,1	6,1

Table A-VII-2

DISTRIBUTION OF ACTIVATION DIFFERENCE BY RESONANCE

VANADIUM -51

Single Foil Thickness (cm)	(mils)	Sandwich Type	E_i (eV)	Contribution to δ (%) Spectrum SN1	SN3	A=-1	A=0	A=+1
0,05	20	1123	4162		47,4	59,2	20,6	2,8
			16200		6,5	5,2	7,0	3,8
			17000		8,6	6,8	9,7	5,4
			29500		2,7	1,7	4,1	4,0
			Others		8,8	6,1	13,6	24,0
			Unres.	55,0	26,0	21,0	45,0	60,0
		1323	4162		34,8	47,7	13,3	1,8
			16200		10,2	9,0	9,8	5,1
			17000		14,0	12,2	13,8	7,6
			29500		3,6	2,4	4,9	4,6
			Others		7,4	4,7	12,2	21,9
			Unres.	53,0	30,0	24,0	46,0	59,0

Table A-VI-3

MAGNITUDE OF ACTIVATION DIFFERENCE

MANGANESE 55

Single Foil Thickness (cm)	(mils)	Sandwich Type	100δ(%) Spectrum SN1	SN3	A=-1	A=0	A=+1
0,0025	1	1123	0,5	12,0	7,4	5,8	0,4
		1323	0,1	2,2	1,3	1,1	0,0
		1135	0,9	21,3	12,8	9,9	0,7
		1535	0,2	5,2	3,0	2,4	0,1
		1147	1,2	29,2	17,2	13,1	0,9
0,005	2	1123	0,8	18,4	11,0	8,4	0,6
		1323	0,1	4,2	2,4	1,9	0,1
		1135	1,3	31,7	18,1	13,6	1,0
		1535	0,3	9,4	5,3	4,0	0,2
		1147	1,8	42,7	23,4	17,5	1,4
0,0125	5	1123	1,3	28,8	16,2	11,8	1,0
		1323	0,2	8,5	4,7	3,4	0,1
		1135	2,2	46,2	24,6	17,7	1,8

Table A-VII-3

DISTRIBUTION OF ACTIVATION DIFFERENCE BY RESONANCE

MANGANESE 55

Single Foil Thickness (cm)	(mils)	Sandwich Type	E_i (eV)	Contribution to δ (%) Spectrum SN1	SN3	A=-1	A=0	A=+1
0,0025	1	1123	337		73,5	85,3	61,6	10,6
			1098		25,7	14,5	34,2	19,1
			Others		0,7	0,2	3,2	47,2
			Unres.	17,5	0,1	0,0	1,0	23,1
		1323	337		70,2	83,0	58,4	9,1
			1098		29,4	16,9	38,7	19,6
			Others		0,3	0,1	2,5	61,4
			Unres.	7,8	0,1	0,0	0,4	9,9
0,005	2	1123	337		75,1	86,2	62,9	9,3
			1098		24,0	13,4	31,7	15,3
			Others		0,8	0,3	4,1	49,0
			Unres.	20,5	0,1	0,1	1,3	26,4
		1323	337		71,5	83,8	60,5	12,8
			1098		28,3	16,1	37,9	26,0
			Others		0,1	0,1	1,2	47,0
			Unres.	9,8	0,1	0,0	0,4	14,2
0,0125	5	1123	337		77,7	88,0	64,5	7,1
			1098		20,8	11,4	27,3	9,8
			Others		1,3	0,5	6,1	51,0
			Unres.	25,9	0,2	0,1	2,1	32,1
		1323	337		75,7	86,6	64,9	15,3
			1098		23,8	13,3	32,4	24,8
			Others		0,4	0,1	2,3	43,8
			Unres.	10,6	0,1	0,0	0,4	16,1

Table A-VI-4

MAGNITUDE OF ACTIVATION DIFFERENCE

COBALT 59

Single Foil Thickness (cm)	(mils)	Sandwich Type	100∫(%) Spectrum SN1	SN3	A=-1	A=0	A=+1
0,0025	1	1123	0,3	36,7	26,5	13,1	0,2
		1323	0,0	11,4	8,2	4,0	0,0
		1135	0,6	58,9	40,6	19,3	0,3
		1535	0,1	21,7	15,0	7,0	0,1
		1147	0,8	75,0	49,4	23,2	0,5
0,0125	5	1123	1,1	48,4	29,5	13,9	0,7
		1323	0,2	18,2	11,2	4,9	0,1
		1135	1,9	68,6	39,5	18,6	1,2
		1535	0,4	27,6	16,0	7,0	0,2
		1147	2,5	82,3	45,3	21,5	1,5

Table A-VII-4

DISTRIBUTION OF ACTIVATION DIFFERENCE BY RESONANCE

COBALT 59

Single Foil Thickness (cm)	(mils)	Sandwich Type	E_i (eV)	Spectrum SN1	SN3	A=-1	A=0	A=+1
0,0025	1	1123	132		99,6	100,0	96,9	19,4
			Others		0,4	0,0	3,1	80,6
			Unres.	-	-	-	-	-
		1323	132		100,0	100,0	99,0	40,2
			Others		0,0	0,0	1,0	59,8
			Unres.	-	-	-	-	-
0,0125	5	1123	132		98,6	99,8	89,4	6,0
			Others		1,4	0,2	10,6	94,0
			Unres.	-	-	-	-	-
		1323	132		99,3	99,9	95,0	14,5
			Others		0,7	0,1	5,0	85,5
			Unres.	-	-	-	-	-

Table A-VI-5

MAGNITUDE OF ACTIVATION DIFFERENCE

COPPER 63

Single Foil Thickness (cm)	(mils)	Sandwich Type	100δ(%) Spectrum SN1	SN3	A=-1	A=0	A=+1
0,0025	1	1123	0,4	12,1	10,3	3,0	0,2
		1323	0,0	2,3	2,0	0,5	0,0
		1135	0,7	21,4	17,8	5,0	0,3
		1535	0,1	5,5	4,7	1,2	0,0
		1147	1,0	29,0	23,5	6,6	0,4
0,005	2	1123	0,8	17,4	14,8	4,3	0,4
		1323	0,1	4,2	3,7	0,9	0,1
		1135	1,3	29,1	23,6	6,9	0,7
0,01	4	1123	1,0	24,7	19,3	5,6	0,4
		1323	0,2	7,4	6,0	1,5	0,1
		1135	1,6	38,5	28,5	8,4	0,7

Table A-VII-5

DISTRIBUTION OF ACTIVATION DIFFERENCE BY RESONANCE

COPPER 63

Single Foil Thickness (cm)	(mils)	Sandwich Type	E_i (eV)	Contribution to δ (%) Spectrum SN1	SN3	A=-1	A=0	A=+1
0,0025	1	1123	577		83,5	92,1	63,8	13,3
			2010		4,2	2,3	5,6	4,1
			2660		6,5	3,4	10,9	10,5
			Others		5,8	2,2	19,7	72,1
			Unres.	-	-	-	-	-
		1323	577		88,1	94,3	73,7	22,8
			2010		3,2	1,8	4,8	5,2
			2660		5,5	2,8	10,1	14,4
			Others		3,2	1,1	11,4	57,6
			Unres.	-	-	-	-	-
0,005	2	1123	577		81,4	91,0	58,7	8,2
			2010		4,6	2,6	5,8	2,8
			2660		7,0	3,8	11,2	7,2
			Others		6,8	2,5	22,6	56,4
			Unres.	10,6	0,2	0,1	1,7	25,4
		1323	577		87,6	94,1	71,2	15,9
			2010		3,3	1,8	4,7	3,7
			2660		5,0	2,5	8,9	9,1
			Others		4,0	1,6	14,2	48,2
			Unres.	9,9	0,1	0,0	1,0	23,1
0,01	4	1123	577		74,2	88,9	53,0	8,2
			2010		5,4	3,2	6,6	3,5
			2660		8,3	4,6	12,6	9,0
			Others		12,1	3,3	27,8	79,3
			Unres.	-	-	-	-	-

Table A-VI-6

MAGNITUDE OF ACTIVATION DIFFERENCE

GALLIUM 71

Single Foil Thickness (cm)	(mils)	Sandwich Type	100δ(%) Spectrum SN1	SN3	A=-1	A=0	A=+1
0,025	10	1123	1,7	34,4	46,9	10,0	0,9
		1323	0,3	10,5	15,0	2,7	0,1
		1135	2,8	55,3	76,5	15,3	1,6

Table A-VII-6

DISTRIBUTION OF ACTIVATION DIFFERENCE BY RESONANCE

GALLIUM 71

Single Foil Thickness (cm)	(mils)	Sandwich Typ	E_i (eV)	Contribution to δ (%) Spectrum SN1	SN3	A=-1	A=0	A=+1
0,025	10	1123	95,0		18,1	47,7	11,0	
			288,0		30,6	28,3	19,7	
			377,0		14,5	11,1	10,2	
			706,0		6,7	3,6	6,2	
			Unres.	98,7	30,1	9,3	52,9	96,3
		1323	95,0		19,5	47,8	13,3	
			288,0		33,7	28,9	24,4	
			377,0		16,3	11,7	12,9	
			706,0		5,8	2,9	6,0	
			Unres.	97,6	24,7	8,7	43,4	92,5

Table A-VI-7

MAGNITUDE OF ACTIVATION DIFFERENCE

ARSENIC 75

Single Foil Thickness (cm)	(mils)	Sandwich Type	100δ(%) Spectrum SN1	SN3	A=-1	A=0	A=+1
0,005	2	1123	0,1	14,2	27,2	2,6	0,1
		1323	0,0	3,1	6,5	0,5	0,0
		1135	0,2	24,2	48,5	4,2	0,1

Table A-VII-7

DISTRIBUTION OF ACTIVATION DIFFERENCE BY RESONANCE

ARSENIC 75

Single Foil Thickness (cm)	(mils)	Sandwich Type	E_i (eV)	Contribution to δ (%) Spectrum SN1	SN3	A=-1	A=0	A=+1
0,005	2	1123	47,0		27,5	71,9	18,2	0,4
			318,6		19,4	9,0	15,4	2,2
			326,7		10,5	4,8	8,4	1,2
			533,4		12,1	4,1	11,8	2,8
			Others		30,0	10,2	41,9	33,9
			Unres.	54,7	0,5	0,0	4,3	59,5
		1323	47,0		33,5	77,1	24,0	0,7
			318,6		21,1	8,6	18,2	3,8
			326,7		10,0	4,0	8,6	1,9
			533,4		14,2	4,3	15,1	5,3
			Others		21,0	6,0	31,7	32,1
			Unres.	49,8	0,2	0,0	2,4	56,2

Table A-VII-8

DISTRIBUTION OF ACTIVATION DIFFERENCE BY RESONANCE

SELENIUM 80

Single Foil Thickness (cm)	(mils)	Sandwich Type	E_i (eV)	Contribution to δ (%) Spectrum SN1	SN3	A=-1	A=0	A=+1
0,050	20	1123	1980		64,1	70,4	46,3	16,9
			4100		19,7	17,5	23,8	17,9
			4800		11,4	9,4	14,9	13,2
			Others		4,8	2,7	15,0	52,0
			Unres.	-	-	-	-	-
		1323	1980		65,3	71,3	48,8	20,3
			4100		20,4	17,9	25,4	21,9
			4800		10,8	8,8	14,6	14,7
			Others		3,5	2,0	11,2	43,1
			Unres.	-	-	-	-	-

Table A-VI-9

MAGNITUDE OF ACTIVATION DIFFERENCE

BROMINE 81

Single Foil Thickness (cm)	(mils)	Sandwich Type	100δ(%) Spectrum SN1	SN3	A=-1	A=0	A=+1
0,05	20	1123	0,7	26,3	41,6	6,0	0,4
		1323	0,1	7,4	13,1	1,4	0,0
		1135	1,3	42,9	67,2	9,4	0,8

Table A-VII-9

DISTRIBUTION OF ACTIVATION DIFFERENCE BY RESONANCE

BROMINE 81

Single Foil Thickness (cm)	(mils)	Sandwich Type	E_i (eV)	Contribution to δ (%) Spectrum SN1	SN3	A=-1	A=0	A=+1
0,05	20	1123	101,0		23,2	40,2	14,2	
			135,5		16,4	21,8	10,3	
			205,0		0,4	0,4	0,3	
			Unres.	99,9	60,0	37,6	75,2	98,8
		1323	101,0		30,5	48,7	22,5	
			135,5		20,6	25,1	15,6	
			205,0		0,1	0,1	0,1	
			Unres.	99,6	48,8	26,1	61,8	94,9

Table A-VI-10

MAGNITUDE OF ACTIVATION DIFFERENCE

MOLYBDENUM 98

Single Foil Thickness (cm)	(mils)	Sandwich Type	100 δ(%) Spectrum SN1	SN3	A=-1	A=0	A=+1
0,0025	1	1123	0,1	5,5	5,9	1,1	0,1
		1323	0,0	0,7	0,5	0,1	0,0
		1135	0,2	10,0	11,3	2,0	0,1
		1535	0,0	2,0	2,8	0,4	0,0
		1147	0,3	13,7	16,3	2,7	0,2
0,02	8	1123	0,6	18,1	20,8	3,4	0,4
		1323	0,1	4,9	5,4	0,8	0,0
		1135	1,1	28,9	34,2	5,3	0,7

Table A-VII-10

DISTRIBUTION OF ACTIVATION DIFFERENCE BY RESONANCE

MOLYBDENUM 98

Single Foil Thickness (cm)	(mils)	Sandwich Type	E_i (eV)	Contribution to δ (%) Spectrum SN1	SN3	A=-1	A=0	A=+1
0,0025	1	1123	429,4		8,4	9,6	6,5	0,9
			467,2		71,1	78,6	57,7	8,6
			1519,0		7,6	4,3	10,2	5,0
			Others		11,6	7,2	16,5	11,1
			Unres.	73,2	1,3	0,3	9,1	74,4
		1323	429,4		5,2	5,8	4,3	0,9
			467,2		80,8	86,7	70,2	15,8
			1519,0		6,8	3,7	9,8	7,2
			Others		6,7	3,6	10,7	11,1
			Unres.	62,5	0,5	0,2	5,0	65,0
0,02	8	1123	429,4		14,0	16,0	9,5	0,8
			467,2		53,5	59,0	38,4	3,4
			1519,0		9,3	5,2	11,0	3,2
			Others		20,5	19,0	24,3	9,0
			Unres.	82,0	2,7	0,8	16,8	83,6
		1323	429,4		9,2	10,5	7,2	1,2
			467,2		68,5	75,4	56,5	10,5
			1519,0		8,5	4,8	11,6	7,0
			Others		12,9	9,0	18,1	15,0
			Unres.	65,0	0,9	0,3	6,6	66,3

Table A-VI-11

MAGNITUDE OF ACTIVATION DIFFERENCE

MOLYBDENUM 100

Single Foil Thickness (cm)	(mils)	Sandwich Type	100 δ (%) Spectrum SN1	SN3	A=-1	A=0	A=+1
0,02	8	1123	0,6		29,9	5,0	0,3
		1323	0,1		8,5	1,1	0,0
		1135	1,2		49,2	8,1	0,6

Table A-VII-11

DISTRIBUTION OF ACTIVATION DIFFERENCE BY RESONANCE

MOLYBDENUM 100

Single Foil Thickness (cm)	(mils)	Sandwich Type	E_i (eV)	Contribution to δ (%) Spectrum SN1	SN3	A=-1	A=0	A=+1
0,02	8	1123	97,7		0,1	0,4	0,1	0,0
			363,3		73,0	86,6	51,3	6,0
			1067,0		6,7	4,1	7,1	2,4
			1255,0		3,4	1,9	4,0	1,6
			1668,0		4,3	2,2	5,9	3,2
			1936,0		4,1	1,9	6,0	3,7
			Unres.	86,2	8,4	2,9	25,6	83,1
		1323	97,7		0,1	0,2	0,0	0,0
			363,3		73,0	86,0	55,2	8,7
			1067,0		8,2	5,0	9,4	4,4
			1255,0		4,3	2,5	5,5	3,0
			1668,0		5,2	2,6	7,7	5,6
			1936,0		4,8	2,3	7,7	6,4
			Unres.	80,2	4,4	1,4	14,5	71,9

Table A-VI-12

MAGNITUDE OF ACTIVATION DIFFERENCE

RHODIUM 103

Single Foil Thickness (cm)	(mils)	Sandwich Type	100 δ (%) Spectrum SN1	SN3	A=-1	A=0	A=+1
0,0025	1	1123	0,0	10,0	67,9	1,1	0,0
		1323	0,0	2,1	22,1	0,2	0,0
		1135	0,1	16,6	115,3	1,8	0,1

Table A-VII-12

DISTRIBUTION OF ACTIVATION DIFFERENCE BY RESONANCE

RHODIUM 103

Single Foil Thickness (cm)	(mils)	Sandwich Type	E_i (eV)	Contribution to δ (%) Spectrum SN1	SN3	A=-1	A=0	A=+1
0,0025	1	1123	1,26		36,6	98,8	22,9	
			272,2		10,9	0,2	10,8	
			319,5		11,8	0,2	12,3	
			Others		33,8	0,7	35,0	
			Unres.	-	6,9	0,1	19,0	-
		1323	1,26		52,1	99,5	38,7	
			272,2		9,5	0,1	11,2	
			319,5		11,0	0,1	13,6	
			Others		24,9	0,3	30,0	
			Unres.	-	2,5	0,0	6,5	-

Table A-VI-13

MAGNITUDE OF ACTIVATION DIFFERENCE

PALLADIUM 108

Single Foil Thickness (cm)	(mils)	Sandwich Type	100 δ (%) Spectrum SN1	SN3	A=-1	A=0	A=+1
0,0125	5	1123	0,3	33,1	78,0	4,8	0,2
		1323	0,0	11,0	30,1	1,4	0,0
		1135	0,5	49,6	116,7	6,9	0,3

Table A-VII-13

DISTRIBUTION OF ACTIVATION DIFFERENCE BY RESONANCE

PALLADIUM 108

Single Foil Thickness (cm)	(mils)	Sandwich Type	E_i (eV)	Contribution to δ (%) Spectrum SN1	SN3	A=-1	A=0	A=+1
0,0125	5	1123	33,24		37,7	71,2	25,3	
			91,6		16,6	15,2	14,9	
			Unres.	100,0	45,7	13,6	59,8	99,0
		1323	33,24		45,4	74,2	35,4	
			91,6		19,7	15,5	20,4	
			Unres.	100,0	34,9	10,3	44,2	96,5

Table A-VI-14

MAGNITUDE OF ACTIVATION DIFFERENCE

CADMIUM 114

Single Foil Thickness (cm)	(mils)	Sandwich Type	100 δ (%) Spectrum SN1	SN3	A=-1	A=0	A=+1
0,03	12	1123	0,9	24,2	49,9	4,7	0,6
		1323	0,1	7,3	16,7	1,1	0,0
		1135	1,7	37,2	79,4	7,4	1,1
		1535	0,2	13,5	31,3	2,2	0,1
		1147	2,4	46,2	100,0	9,3	1,6
0,05	20	1123	1,4	27,1	56,3	5,6	0,9
		1323	0,2	9,0	20,5	1,5	0,1
		1135	2,4	40,0	84,4	8,5	1,7
		1535	0,5	15,3	34,9	2,7	0,3
		1147	3,2	48,3	102,9	10,4	2,2

Table A-VII-14

DISTRIBUTION OF ACTIVATION DIFFERENCE BY RESONANCE

CADMIUM 114

Single Foil Thickness (cm)	(mils)	Sandwich Type	E_i (eV)	Contribution to δ (%) Spectrum SN1	SN3	A=-1	A=0	A=+1
0,03	12	1123	120,2		33,8	64,2	17,3	
			394,1		23,4	18,1	15,9	
			Others		19,5	9,9	18,0	
			Unres.	96,4	23,3	7,8	48,8	95,2
		1323	120,2		38,7	66,8	24,5	1,6
			394,1		29,1	20,4	24,6	5,4
			Others		16,5	7,6	19,2	9,3
			Unres.	89,1	15,7	5,2	31,7	83,7
0,05	20	1123	120,2		30,7	61,9	14,0	
			394,1		19,9	16,2	12,0	
			Others		21,4	11,9	17,5	
			Unres.	97,3	28,0	10,0	56,5	96,6
		1323	120,2		35,3	65,1	19,9	1,0
			394,1		23,6	17,7	17,7	2,8
			Others		20,1	10,0	20,3	6,9
			Unres.	93,7	21,0	7,2	42,1	89,3

Table A-VI-15

MAGNITUDE OF ACTIVATION DIFFERENCE

INDIUM 115

Single Foil Thickness (cm)	(mils)	Sandwich Type	100 δ (%) Spectrum SN1	SN3	A=-1	A=0	A=+1
0,0005	0,2	1123	0,0	9,7	57,3	0,7	0,0
		1323	0,0	2,4	16,6	0,2	0,0
		1135	0,0	15,4	107,6	1,2	0,0
		1535	0,0	5,8	40,9	0,4	0,0
		1147	0,0	17,7	146,0	1,3	0,0
0,0025	1	1123	0,0	10,3	105,0	0,8	0,0
		1323	0,0	3,6	40,9	0,3	0,0
		1135	0,0	13,9	166,8	1,1	0,0
		1535	0,0	4,9	71,4	0,3	0,0
		1147	0,0	16,4	205,0	1,3	0,0
0,005	2	1123	0,0	9,8	113,0	0,8	0,0
		1323	0,0	3,1	44,8	0,2	0,0
		1135	0,0	14,0	175,0	1,2	0,0
		1535	0,0	4,7	75,6	0,3	0,0
		1147	0,0	16,8	214,5	1,4	0,0
0,0125	5	1123	0,0	10,6	117,2	1,0	0,0
		1323	0,0	3,0	47,5	0,2	0,0
		1135	0,1	16,1	178,8	1,5	0,0

Table A-VII-15

DISTRIBUTION OF ACTIVATION DIFFERENCE BY RESONANCE

INDIUM 115

Single Foil Thickness (cm)	(mils)	Sandwich Type	E_i (eV)	Contribution to δ (%) Spectrum SN1	SN3	A=-1	A=0	A=+1
0,0005	0,2	1123	1,46		95,2	99,4	91,9	
			9,12		0,9	0,3	1,8	
			Others		1,6	0,3	0,9	
			Unres.	100,0	2,3	0,0	5,4	99,0
		1323	1,46		99,2	99+	-	
			9,12		-	-	-	
			Others		-	-	-	
			Unres.	100,0	0,7	0,0	2,3	99,2
0,0025	1	1123	1,46		82,4	98,2	71,3	
			9,12		2,0	0,8	3,7	
			Others		6,2	0,9	5,7	
			Unres.	100,0	9,4	0,1	19,3	99,5
		1323	1,46		91,7	99+	84,5	
			9,12		-	-	-	
			Others		-	-	-	
			Unres.	100,0	2,3	0,0	7,0	99,1
0,005	2	1123	1,46		67,7	95,9	53,1	
			9,12		4,0	2,0	6,8	
			Others		10,5	1,8	7,8	
			Unres.	100,0	17,8	0,3	32,3	99,3
		1323	1,46		86,5	97,9	76,7	
			9,12		3,0	1,2	5,8	
			Others		5,0	0,8	3,8	
			Unres.	100,0	5,5	0,1	13,7	99,6
0,0125	5	1123	1,46		44,0	91,6	28,4	
			9,12		4,8	3,5	6,7	
			Others		16,2	4,1	10,4	
			Unres.	100,0	35,0	0,8	54,5	99,6
		1323	1,46		64,7	94,2	51,4	
			9,12		5,7	2,9	9,9	
			Others		14,2	2,6	10,6	
			Unres.	100,0	15,4	0,3	28,1	99,6

Table A-VI-16

MAGNITUDE OF ACTIVATION DIFFERENCE

ANTIMONY 121

Single Foil Thickness (cm)	(mils)	Sandwich Type	100 δ (%) Spectrum SN1	SN3	A=-1	A=0	A=+1
0.0125	5	1123	0.0	8.0	48.5	1.3	0.0
		1323	0.0	1.5	14.4	0.2	0.0
		1135	0.7	13.5	85.2	2.2	0.0

Table A-VII-16

DISTRIBUTION OF ACTIVATION DIFFERENCE BY RESONANCE

ANTIMONY 121

Single Foil Thickness (cm)	(mils)	Sandwich Type	E_i (eV)	Contribution to δ (%) Spectrum SN1	SN3	A=-1	A=0	A=+1
0.0125	5	1123	6.24		14.8	55.6	12.1	
			15.4		15.6	30.6	16.4	
			29.7		7.0	4.5	4.7	
			111.4		6.8	1.6	6.3	
			Others		24.1	5.0	18.6	
			Unres.	99+	31.7	2.7	41.9	98.0
		1323	6.24		23.8	58.4	20.6	
			15.4		26.2	33.8	29.4	
			29.7		7.4	3.1	5.3	
			111.4		8.4	1.1	7.0	
			Others		18.4	2.6	16.3	
			Unres.	99+	15.8	1.0	21.4	97.0

Table A-VI-17

MAGNITUDE OF ACTIVATION DIFFERENCE

CESIUM 133

Single Foil Thickness (cm)	(mils)	Sandwich Type	100 δ (%) Spectrum SN1	SN3	A=-1	A=0	A=+1
0.005	2	1123	0.0	8.0	35.2	1.4	0.0
		1323	0.0	1.5	8.6	0.2	0.0
		1135	0.0	13.8	64.6	2.3	0.0

Table A-VII-17

DISTRIBUTION OF ACTIVATION DIFFERENCE BY RESONANCE

CESIUM 133

Single Foil Thickness (cm)	(mils)	Sandwich Type	E_i (eV)	Contribution to δ (%) Spectrum SN1	SN3	A=-1	A=0	A=+1
0.005	2	1123	5.9		40.2	90.2	35.6	
			22.6		7.7	4.0	6.1	
			47.8		8.3	2.4	7.6	
			126.1		13.4	1.4	12.2	
			234.4		10.8	0.7	10.8	
			Others		19.1	1.3	25.1	
			Unres.	-	0.5	0.0	2.6	47.1
		1323	5.9		53.9	94.1	50.3	
			22.6		5.8	2.4	4.8	
			47.8		6.0	1.4	5.9	
			126.1		12.1	1.0	11.5	
			234.4		10.1	0.5	10.7	
			Others		11.8	0.6	15.3	
			Unres.	-	0.3	0.0	1.5	46.2

Table A-VI-18

MAGNITUDE OF ACTIVATION DIFFERENCE

LANTHENUM 139

Single Foil Thickness (cm)	(mils)	Sandwich Type	100δ*(%) Spectrum SN1	SN3	A=-1	A=0	A=+1
0,005	2	1123	0,0	9,3	18,7	1,4	0,0
		1323	0,0	2,0	3,8	0,3	0,0
		1135	0,0	15,5	32,4	2,3	0,0
		1535	0,0	4,5	9,4	0,7	0,0
		1147	0,0	20,2	43,6	2,9	0,0
0,0125	5	1123	0,0	13,7	30,8	2,0	0,0
		1323	0,0	4,2	9,4	0,6	0,0
		1135	0,0	20,1	47,5	2,7	0,0
0,025	10	1123	0,0	14,6	36,0	2,0	0,0
		1323	0,0	5,3	13,2	0,7	0,0
		1135	0,0	19,2	49,4	2,5	0,0

*No unresolved resonance self shielding included

Table A-VI-19

MAGNITUDE OF ACTIVATION DIFFERENCE

SAMARIUM 152

Single Foil Thickness (cm)	(mils)	Sandwich Type	100 δ (%) Spectrum SN1	SN3	A=-1	A=0	A=+1
0.0125	5	1123	0.2	37.9	100.0	6.9	0.2
		1323	0.0	13.0	40.3	2.2	0.0
		1135	0.4	56.6	148.0	9.7	0.3

Table A-VII-19

DISTRIBUTION OF ACTIVATION DIFFERENCE BY RESONANCE

SAMARIUM 152

Single Foil Thickness (cm)	(mils)	Sandwich Type	E_i (eV)	Contribution to δ (%) Spectrum SN1	SN3	A=-1	A=0	A=+1
0.0125	5	1123	8.01	0.0	53.5	96.1	48.5	0.3
			Unres.	100.0	46.5	3.9	51.5	99.7
		1323	8.01	0.0	63.5	96.9	61.8	0.8
			Unres.	100.0	36.5	3.1	38.2	99.2

Table A-VI-20

MAGNITUDE OF ACTIVATION DIFFERENCE

TUNGSTEN 186

Single Foil Thickness (cm)	(mils)	Sandwich Type	100 δ (%) Spectrum SN1	SN3	A=-1	A=0	A=+1
0.0025	1	1123	0.1	22.3	59.6	4.5	0.1
		1323	0.0	6.9	20.9	1.3	0.0
		1135	0.2	33.7	99.4	6.4	0.1
		1535	0.0	11.8	38.5	2.2	0.0
		1147	0.3	41.9	129.7	7.7	0.1
0.005	2	1123	0.2	25.1	73.1	4.8	0.1
		1323	0.0	8.0	26.3	1.5	0.0
		1135	0.3	37.6	117.7	6.8	0.2
		1535	0.0	13.4	44.6	2.3	0.0
		1147	0.4	46.9	144.7	8.2	0.2
0.0125	5	1123	0.3	28.6	88.8	5.1	0.2
		1323	0.0	9.6	33.8	1.6	0.0
		1135	0.6	42.2	139.4	7.2	0.3

Table A-VII-20

DISTRIBUTION OF ACTIVATION DIFFERENCE BY RESONANCE

TUNGSTEN 186

Single Foil Thickness (cm)	(mils)	Sandwich Type	E_i (eV)	Contribution to δ (%) Spectrum SN1	SN3	A=-1	A=0	A=+1
0.0025	1	1123	18.80		78.0	98.5	74.1	
			218.0		9.3	0.9	7.5	
			Others		11.4	0.6	13.3	
			Unres.	-	1.3	0.0	5.1	-
		1323	18.80		87.1	99.1	85.7	
			218.0		7.6	0.6	6.3	
			Others		4.9	0.3	6.3	
			Unres.	-	0.4	0.0	1.7	-
0.005	2	1123	18.80		70.1	97.8	64.3	
			218.0		10.8	1.1	8.3	
			Others		16.9	1.1	19.4	
			Unres.	-	2.2	0.0	8.0	-
		1323	18.80		79.2	98.5	76.6	
			218.0		10.7	1.0	8.8	
			Others		9.3	0.5	11.2	
			Unres.	-	0.8	0.0	3.4	-
0.0125	5	1123	18.80		58.5	96.5	50.0	
			218.0		10.2	1.2	7.4	
			Others		27.1	2.2	28.4	
			Unres.	-	4.2	0.1	14.2	-
		1323	18.80		67.2	97.5	62.7	
			218.0		11.5	1.2	9.0	
			Others		19.7	1.3	22.9	
			Unres.	-	1.6	0.0	5.4	-

Table A-VI-21

MAGNITUDE OF ACTIVATION DIFFERENCE

RHENIUM 187

Single Foil Thickness (cm)	(mils)	Sandwich Type	100 δ (%) Spectrum SN1	SN3	A=-1	A=0	A=+1
0.0025	1	1123	0	4.0	20.4	0.4	0
		1323	0	0.7	3.9	0.1	0
		1135	0	6.7	37.6	0.6	0

Table A-VII-21

DISTRIBUTION OF ACTIVATION DIFFERENCE BY RESONANCE

RHENIUM 187

Single Foil Thickness (cm)	(mils)	Sandwich Type	E_i (eV)	Contribution to δ (%) Spectrum SN1	SN3	A=-1	A=0	A=+1
0.0025	1	1123	4.41		8.9	24.6	3.2	
			11.1		6.0	25.2	8.4	
			32.2		15.0	12.8	12.3	
			39.5		17.4	11.8	13.9	
			61.5		11.5	6.5	11.9	
			Others		8.4	11.2	9.2	
			Unres.	99.	32.8	7.9	41.1	90.5
		1323	4.41		9.5	24.3	3.7	
			11.1		7.2	27.6	10.5	
			32.2		19.6	15.5	17.0	
			39.5		24.0	15.0	20.2	
			61.5		14.4	7.5	15.7	
			Others		4.7	4.4	5.3	
			Unres.	99.	20.6	5.7	27.6	81.7

Table A-VII-22

DISTRIBUTION OF ACTIVATION DIFFERENCE BY RESONANCE

IRIDIUM 191

Single Foil Thickness (cm)	(mils)	Sandwich Type	E_i (eV)	Contribution to δ (%) Spectrum SN1	SN3	A=-1	A=0	A=+1
0.005	2	1123	0.65		16.4	79.7	18.4	0.7
			5.36		25.0	12.1	22.8	6.7
			25.3		16.6	1.6	14.6	20.2
			30.0		14.5	1.2	12.5	20.5
			51.3		11.5	0.7	12.1	34.1
			Others		16.0	4.7	19.6	17.8
			Unres.		-	-	-	-
		1323	0.65		20.0	82.8	22.7	0.9
			5.36		29.0	11.9	26.8	8.5
			25.3		17.1	1.4	15.3	22.8
			30.0		13.9	1.0	12.2	21.5
			51.3		11.4	0.6	12.1	36.7
			Others		8.6	2.3	10.9	9.6
			Unres.		-	-	-	-

Table A-VI-23

MAGNITUDE OF ACTIVATION DIFFERENCE

PLATINUM 198

Single Foil Thickness (cm)	(mils)	Sandwich Type	100 δ (%) Spectrum SN1	SN3	A=-1	A=0	A=+1
0.025	10	1123	0.2	18.8	40.3	2.9	0.1
		1323	0.0	5.2	13.1	0.7	0.0
		1135	0.4	29.5	63.3	4.5	0.2

Table A-VII-23

DISTRIBUTION OF ACTIVATION DIFFERENCE BY RESONANCE

PLATINUM 198

Single Foil Thickness (cm)	(mils)	Sandwich Type	E_i (eV)	Contribution to δ (%) Spectrum SN1	SN3	A=-1	A=0	A=+1
0.025	10	1123	96.0		39.0	72.8	28.2	
			260.5		14.0	9.8	10.3	
			307.8		7.6	4.7	5.9	
			Unres.	99.4	39.4	12.7	55.6	-
		1323	96.0		49.5	79.6	39.2	
			260.5		12.0	7.3	9.7	
			307.8		7.3	4.0	6.3	
			Unres.	99.1	31.2	9.1	44.8	-

Table A-VI-24

MAGNITUDE OF ACTIVATION DIFFERENCE

GOLD 197

Single Foil Thickness (cm)	(mils)	Sandwich Type	100 δ(%) Spectrum SN1	SN3	A=-1	A=0	A=+1
0.0005	0.2	1123	0.0	13.5	67.1	2.6	0.0
		1323	0.0	3.9	22.0	0.7	0.0
		1135	0.1	20.5	116.8	3.8	0.0
		1535	0.0	6.6	46.0	1.1	0.0
		1147	0.1	26.0	156.3	4.6	0.1
0.0025	1	1123	0.2	18.7	101.2	3.3	0.1
		1323	0.0	5.6	40.6	0.9	0.0
		1135	0.3	28.3	151.3	4.9	0.2
		1535	0.0	9.2	64.7	1.4	0.0
		1147	0.4	36.1	190.1	6.2	0.2
0.005	2	1123	0.3	21.7	101.5	3.9	0.2
		1323	0.0	6.3	41.0	1.0	0.0
		1135	0.5	33.9	150.4	5.9	0.3
		1535	0.1	11.1	64.6	1.7	0.0
		1147	0.7	43.4	186.9	7.4	0.4

Table A-VII-24

DISTRIBUTION OF ACTIVATION DIFFERENCE BY RESONANCE

GOLD 197

Single Foil Thickness (cm)	(mils)	Sandwich Type	E_i (eV)	Contribution to δ (%) Spectrum SN1	SN3	A=-1	A=0	A=+1
0.0005	0.2	1123	4.906		75.1	98.2	64.7	
			60.2		10.3	1.4	11.3	
			Others		12.6	0.4	18.0	
			Unres.		2.0	0.0	6.0	85.4
		1323	4.906		86.0	99.0	80.1	
			60.2		6.8	0.8	8.0	
			Others		6.7	0.2	9.5	
			Unres.		0.5	0.0	2.4	
0.0025	1	1123	4.906		46.3	95.2	32.0	
			60.2		14.3	3.0	12.6	
			Others		33.1	1.7	38.2	
			Unres.	94.2	6.3	0.1	17.2	87.2
		1323	4.906		62.4	96.8	51.1	
			60.2		15.9	2.6	16.6	
			Others		19.8	0.6	26.9	
			Unres.	87.8	1.9	0.0	5.4	75.0
0.005	2	1123	4.906		32.5	92.8	19.6	
			60.2		12.5	3.7	9.6	
			Others		44.8	3.2	45.1	
			Unres.	95.2	10.2	0.3	25.7	89.7
		1323	4.906		45.6	94.7	33.2	
			60.2		16.1	3.5	14.9	
			Others		34.4	1.7	41.5	
			Unres.	88.5	3.9	0.1	10.4	73.9

Table A-VIII

COMPARISON OF THE IM, IR, AND NR APPROXIMATIONS TO SOME RESONANCE INTEGRALS

Isotope	Foil Thickn. (cm)	E_i (eV)	I_i^∞ (barns)	$I_i(0^\circ K)$ (barns) Approximation IM	IR	NR
Na23	0.05	2850	0.069	0.069	0.060	0.040
V51	0.05	4162	0.066	0.066	0.063	0.037
		6840	0.019	0.019	0.019	0.013
Mn55	0.0125	337	7.367	6.833	5.478	2.992
		1098	0.961	0.912	0.644	0.541
Co59	0.0025	132	54.84	46.26	37.39	24.13
Cu63	0.01	577	2.586	1.930	1.577	1.536
		2010	0.207	0.206	0.185	0.166
Ga71	0.025	95.0	12.54	7.73	7.43	7.32
		288.0	10.00	8.75	6.30	4.16
Se80	0.15	1980	0.261	0.256	0.192	0.125
		4100	0.061	0.060	0.045	0.037
Br81	0.15	101.0	24.94	8.70	7.91	7.35
		135.5	13.91	6.73	5.30	4.65
Mo98	0.02	429.4	1.155	0.880	0.841	0.838
		467.2	2.927	2.307	1.668	1.598
Mo100	0.06	363.3	5.186	3.924	2.623	2.375
Rh103	0.0075	1.26	1001	401	401	405
Pd108	0.0375	33.2	176.0	34.7	33.1	27.6
		91.6	29.37	9.37	7.29	6.26
Cd114	0.05	120.2	9.670	4.028	3.781	3.698
		394.1	3.313	2.244	1.355	1.208
Sb121	0.0125	6.24	102.7	61.0	61.0	61.0
Cs133	0.05	5.9	293.5	94.6	94.7	93.7
La139	0.0125	72.4	9.081	5.507	5.207	5.125
Sm152	0.0125	8.00	2119	529	518	351
W186	0.0025	18.8	513.5	315.6	274.1	157.7
		218.0	4.80	4.50	3.66	3.45
Re187	0.0025	4.4	39.82	30.70	30.80	30.87
Pt198	0.025	96.0	37.97	26.99	20.94	16.14
Au197	0.015	4.9	1478	196	196	190
		60.2	32.5	9.6	9.2	8.0

Table A-IX

DOPPLER BROADENED (300°K) CAPTURE RESONANCE INTEGRALS BY RESONANCE

Table Notes:

The column headings have meanings and units as follows:

RES ENERGY	Resonance energy	eV
DILUTE	Infinite dilution resonance integral	barns
L=_____ CM	Effective resonance integral for infinite slab. L indicates the mean chord length, i.e., two times the thickness	bmrns

TABLE A-IX

DOPPLER BROADENED (300°K) CAPTURE RESONANCE INTEGRALS BY RESONANCE

1. SODIUM 23

RES NO	RES ENERGY	DILUTE	L=0.02500 CM	L=0.05000 CM	L=0.07500 CM
1	2850.000	6.94818E-02	6.56225E-02	6.32028E-02	6.12799E-02
2	34000.000	5.32577E-04	5.21361E-04	5.13418E-04	5.06399E-04
3	54100.000	3.68189E-04	3.59918E-04	3.53943E-04	3.48752E-04
4	55000.000	2.54176E-04	2.49246E-04	2.45803E-04	2.42711E-04
5	61500.000	4.06777E-05	4.06777E-05	4.04630E-05	4.02460E-05
6	63600.000	1.14136E-04	1.12947E-04	1.12068E-04	1.11253E-04
7	66800.000	1.03463E-04	1.02422E-04	1.01628E-04	1.00948E-04
8	72500.000	1.46353E-04	1.44123E-04	1.42535E-04	1.41136E-04
9	75700.000	2.68604E-05	2.68604E-05	2.66629E-05	2.66560E-05
10	77600.000	2.55598E-05	2.55598E-05	2.54596E-05	2.53567E-05
11	79900.000	2.41118E-05	2.41022E-05	2.40124E-05	2.39608E-05
12	81500.000	2.31761E-05	2.28581E-05	2.30789E-05	2.30266E-05
13	83900.000	2.18684E-05	2.18684E-05	2.17714E-05	2.17212E-05
14	85300.000	2.11481E-05	2.11343E-05	2.10504E-05	2.10020E-05
15	86400.000	2.06101E-05	2.06101E-05	2.05128E-05	2.04196E-05
16	88400.000	1.96929E-05	1.96929E-05	1.95963E-05	1.95484E-05
17	91300.000	5.53900E-05	5.49234E-05	5.46337E-05	5.43439E-05
18	93000.000	5.33870E-05	5.30370E-05	5.26717E-05	5.24174E-05
19	96500.000	1.65332E-05	1.65332E-05	1.65310E-05	1.64398E-05
20	98600.000	4.74918E-05	4.71552E-05	4.68617E-05	4.66653E-05

RES NO	RES ENERGY	DILUTE	L=0.10000 CM	L=0.12500 CM	L=0.15000 CM
1	2850.000	6.94818E-02	5.96422E-02	5.81960E-02	5.68925E-02
2	34000.000	5.32577E-04	5.00021E-04	4.94248E-04	4.88929E-04
3	54100.000	3.68189E-04	3.44103E-04	3.39902E-04	3.36044E-04
4	55000.000	2.54176E-04	2.39752E-04	2.37055E-04	2.34583E-04
5	61500.000	4.06777E-05	4.01760E-05	4.00584E-05	3.99711E-05
6	63600.000	1.14136E-04	1.10550E-04	1.09886E-04	1.09260E-04
7	66800.000	1.03463E-04	1.00335E-04	9.97556E-05	9.92140E-05
8	72500.000	1.46353E-04	1.39855E-04	1.38610E-04	1.37439E-04
9	75700.000	2.68604E-05	2.66086E-05	2.65349E-05	2.64755E-05
10	77600.000	2.55598E-05	2.53098E-05	2.52581E-05	2.52077E-05
11	79900.000	2.41118E-05	2.38659E-05	2.38341E-05	2.37953E-05
12	81500.000	2.31761E-05	2.29606E-05	2.29206E-05	2.28780E-05
13	83900.000	2.18684E-05	2.16840E-05	2.16367E-05	2.16035E-05
14	85300.000	2.11481E-05	2.09638E-05	2.09165E-05	2.08686E-05
15	86400.000	2.06101E-05	2.04001E-05	2.03598E-05	2.03457E-05
16	88400.000	1.96929E-05	1.95124E-05	1.94845E-05	1.94467E-05
17	91300.000	5.53900E-05	5.40861E-05	5.38558E-05	5.36289E-05
18	93000.000	5.33870E-05	5.21670E-05	5.19372E-05	5.17294E-05
19	96500.000	1.65332E-05	1.64157E-05	1.63720E-05	1.63685E-05
20	98600.000	4.74918E-05	4.64506E-05	4.62613E-05	4.60725E-05

TABLE A-IX (Page 2)

DOPPLER BROADENED (300°K) CAPTURE RESONANCE INTEGRALS BY RESONANCE

1. SODIUM 23 (continued)

RES NO	RES ENERGY	DILUTE	L=0.10000 CM	L=0.20000 CM	L=0.30000 CM
1	2850.000	6.94818E-02	5.96422E-02	5.46161E-02	5.09522E-02
2	34000.000	5.32577E-04	5.00021E-04	4.79347E-04	4.63159E-04
3	54100.000	3.68189E-04	3.44103E-04	3.29127E-04	3.17522E-04
4	55000.000	2.54176E-04	2.39752E-04	2.30120E-04	2.22566E-04
5	61500.000	4.06777E-05	4.01760E-05	3.97998E-05	3.94960E-05
6	63600.000	1.14136E-04	1.10550E-04	1.08054E-04	1.05948E-04
7	66800.000	1.03463E-04	1.00335E-04	9.81624E-05	9.63113E-05
8	72500.000	1.46353E-04	1.39855E-04	1.35333E-04	1.31734E-04
9	75700.000	2.68604E-05	2.66086E-05	2.64025E-05	2.62367E-05
10	77600.000	2.55598E-05	2.53098E-05	2.51257E-05	2.49714E-05
11	79900.000	2.41118E-05	2.38659E-05	2.37198E-05	2.35774E-05
12	81500.000	2.31761E-05	2.29606E-05	2.28149E-05	2.26837E-05
13	83900.000	2.18684E-05	2.16840E-05	2.15295E-05	2.14057E-05
14	85300.000	2.11481E-05	2.09638E-05	2.08024E-05	2.06810E-05
15	86400.000	2.06101E-05	2.04001E-05	2.02755E-05	2.01558E-05
16	88400.000	1.96929E-05	1.95124E-05	1.93884E-05	1.92739E-05
17	91300.000	5.53900E-05	5.40861E-05	5.32067E-05	5.24268E-05
18	93000.000	5.33870E-05	5.21670E-05	5.13292E-05	5.05994E-05
19	96500.000	1.65332E-05	1.64157E-05	1.63188E-05	1.62410E-05
20	98600.000	4.74918E-05	4.64506E-05	4.57346E-05	4.51091E-05

2. VANADIUM 51

RES NO	RES ENERGY	DILUTE	L=0.10000 CM	L=0.20000 CM	L=0.30000 CM
1	4162.000	6.66150E-02	6.25073E-02	5.95538E-02	5.70433E-02
2	6840.000	1.91945E-02	1.89972E-02	1.88376E-02	1.86846E-02
3	11750.000	6.50642E-03	6.52395E-03	6.53925E-03	6.55436E-03
4	16200.000	4.39493E-03	3.87235E-03	3.61433E-03	3.43937E-03
5	17000.000	3.97464E-03	3.28180E-03	2.94362E-03	2.71774E-03
6	21600.000	1.92444E-03	1.83262E-03	1.77883E-03	1.73812E-03
7	29500.000	1.32380E-03	1.17269E-03	1.08986E-03	1.02990E-03
8	39300.000	5.81155E-04	5.46951E-04	5.26234E-04	5.10432E-04
9	48150.000	4.96551E-04	4.53611E-04	4.28054E-04	4.08751E-04
10	49550.000	3.65616E-04	3.47083E-04	3.35506E-04	3.26549E-04
11	51950.000	4.26135E-04	3.90514E-04	3.69017E-04	3.52694E-04
12	53000.000	3.19657E-04	3.07083E-04	2.99132E-04	2.92946E-04
13	62900.000	2.27038E-04	2.25507E-04	2.24525E-04	2.23738E-04
14	68400.000	2.46855E-04	2.45643E-04	2.44903E-04	2.44336E-04
15	83000.000	1.67596E-04	1.61570E-04	1.57705E-04	1.54688E-04
16	87600.000	1.50492E-04	1.47794E-04	1.46075E-04	1.44720E-04
17	110800.000	7.30315E-05	7.04462E-05	6.86508E-05	6.71862E-05
18	113500.000	8.92567E-05	8.53332E-05	8.25201E-05	8.03356E-05
19	114800.000	6.77435E-05	6.53968E-05	6.36745E-05	6.22549E-05
20	116600.000	8.49404E-05	8.32699E-05	8.21838E-05	8.13135E-05
21	118700.000	8.19766E-05	8.23166E-05	8.25837E-05	8.28301E-05
22	118701.000	6.35158E-05	6.13461E-05	5.97978E-05	5.85163E-05
23	134700.000	6.36501E-05	6.27390E-05	6.21461E-05	6.16695E-05
24	141300.000	4.49897E-05	4.45406E-05	4.42407E-05	4.39974E-05
25	145700.000	4.23052E-05	4.14795E-05	4.09203E-05	4.04545E-05
26	152900.000	4.93998E-05	4.87728E-05	4.83641E-05	4.80328E-05

TABLE A-IX (Page 3)

DOPPLER BROADENED (300°K) CAPTURE RESONANCE INTEGRALS BY RESONANCE

3. MANGANESE 55

RES NO	RES ENERGY	DILUTE	L=0.00500 CM	L=0.01000 CM	L=0.01500 CM
1	337.000	7.36688E 00	6.67175E 00	6.26808E 00	5.95774E 00
2	1098.000	9.60600E-01	8.33903E-01	7.65311E-01	7.15679E-01
3	2375.000	2.12081E-01	2.11275E-01	2.10647E-01	2.10074E-01
4	7170.000	1.66247E-02	1.65133E-02	1.64307E-02	1.63595E-02
5	8870.000	1.52050E-02	1.50486E-02	1.49353E-02	1.48378E-02
6	17800.000	2.61350E-03	2.57623E-03	2.55169E-03	2.53033E-03
7	18000.000	3.66858E-03	3.60001E-03	3.55190E-03	3.50864E-03
8	21000.000	2.71444E-03	2.70137E-03	2.69246E-03	2.68439E-03
9	23700.000	1.52137E-03	1.51102E-03	1.50220E-03	1.49488E-03
10	25900.000	1.20391E-03	1.19278E-03	1.18621E-03	1.17938E-03
11	26400.000	1.22261E-03	1.21110E-03	1.20175E-03	1.19408E-03
12	27000.000	1.64087E-03	1.62585E-03	1.61475E-03	1.60493E-03
13	35300.000	9.61031E-04	9.60068E-04	9.60419E-04	9.60247E-04
14	41000.000	7.11261E-04	7.05836E-04	7.01309E-04	6.97529E-04
15	43200.000	3.79445E-04	3.78323E-04	3.78136E-04	3.77528E-04
16	46820.000	3.74724E-04	3.72639E-04	3.70992E-04	3.69958E-04
17	47300.000	3.72748E-04	3.69972E-04	3.68387E-04	3.67363E-04
18	53400.000	2.98314E-04	2.96226E-04	2.95036E-04	2.94018E-04
19	54200.000	2.79625E-04	2.77666E-04	2.77233E-04	2.76509E-04
20	54400.000	2.75499E-04	2.74404E-04	2.73466E-04	2.72738E-04
21	57450.000	3.62680E-04	3.61141E-04	3.60081E-04	3.58980E-04
22	58000.000	2.52257E-04	2.51141E-04	2.49731E-04	2.48865E-04
23	59500.000	3.37702E-04	3.35436E-04	3.33992E-04	3.32701E-04
24	59950.000	2.36896E-04	2.35830E-04	2.34711E-04	2.33768E-04
25	64100.000	2.91349E-04	2.90609E-04	2.89337E-04	2.88757E-04
26	65510.000	1.95314E-04	1.94099E-04	1.93785E-04	1.92900E-04
27	66600.000	1.92223E-04	1.91232E-04	1.90763E-04	1.90131E-04
28	69500.000	2.47174E-04	2.45723E-04	2.44575E-04	2.43607E-04
29	70070.000	1.73986E-04	1.73986E-04	1.72846E-04	1.72407E-04
30	72700.000	1.57520E-04	1.57520E-04	1.56411E-04	1.55841E-04
31	73900.000	2.19168E-04	2.18488E-04	2.17514E-04	2.17078E-04
32	81300.000	1.29309E-04	1.28439E-04	1.28520E-04	1.28374E-04
33	84350.000	1.68281E-04	1.68281E-04	1.67508E-04	1.67305E-04
34	96050.000	9.25285E-05	9.25285E-05	9.20288E-05	9.18070E-05
35	98200.000	1.24070E-04	1.23476E-04	1.23187E-04	1.22912E-04
36	103700.000	7.94222E-05	7.93733E-05	7.89622E-05	7.88398E-05
37	104900.000	7.77335E-05	7.77335E-05	7.77301E-05	7.75023E-05
38	107000.000	7.46459E-05	7.39117E-05	7.41971E-05	7.41861E-05
39	109400.000	7.14667E-05	7.14667E-05	7.14667E-05	7.11309E-05
40	110900.000	9.73621E-05	9.73621E-05	9.70328E-05	9.69477E-05
41	116100.000	8.87657E-05	8.87657E-05	8.81369E-05	8.80396E-05
42	118400.000	8.53812E-05	8.48580E-05	8.49060E-05	8.47479E-05
43	123500.000	5.60459E-05	5.60459E-05	5.58339E-05	5.57307E-05
44	127000.000	7.42433E-05	7.42433E-05	7.40914E-05	7.39392E-05
45	128100.000	5.21268E-05	5.21268E-05	5.21268E-05	5.19217E-05

TABLE A-IX (Page 4)

DOPPLER BROADENED (300°K) CAPTURE RESONANCE INTEGRALS BY RESONANCE

3. MANGANESE 55 (continued)

RES NO	RES ENERGY	DILUTE	L=0.00500 CM	L=0.01000 CM	L=0.01500 CM
46	129500.000	5.10016E-05	5.10016E-05	5.09970E-05	5.08004E-05
47	131000.000	6.96375E-05	6.91239E-05	6.93386E-05	6.90416E-05
48	142100.000	5.92637E-05	5.92637E-05	5.89823E-05	5.89045E-05
49	151300.000	3.73333E-05	3.73333E-05	3.73333E-05	3.71492E-05
50	155800.000	3.52335E-05	3.52335E-05	3.52335E-05	3.51413E-05
51	158700.000	4.75315E-05	4.75315E-05	4.72705E-05	4.72694E-05
52	166900.000	3.06683E-05	3.06683E-05	3.06683E-05	3.04946E-05
53	172200.000	4.03812E-05	4.03812E-05	4.02558E-05	4.02556E-05
54	176900.000	3.82153E-05	3.82153E-05	3.82153E-05	3.79690E-05
55	179900.000	2.64010E-05	2.64010E-05	2.64010E-05	2.62364E-05
56	181000.000	3.64877E-05	3.64555E-05	3.64877E-05	3.62443E-05
57	184400.000	2.51515E-05	2.51515E-05	2.51515E-05	2.51515E-05
58	186200.000	3.45393E-05	3.45393E-05	3.44209E-05	3.44203E-05
59	188500.000	3.36884E-05	3.36884E-05	3.36884E-05	3.35141E-05
60	193900.000	3.18048E-05	3.18048E-05	3.16813E-05	3.16265E-05
61	197600.000	2.18967E-05	2.18967E-05	2.18967E-05	2.18967E-05

RES NO	RES ENERGY	DILUTE	L=0.02000 CM	L=0.02500 CM	L=0.03000 CM
1	337.000	7.36688E 00	5.70170E 00	5.48505E 00	5.29748E 00
2	1098.000	9.60600E-01	6.77318E-01	6.46290E-01	6.20477E-01
3	2375.000	2.12081E-01	2.09529E-01	2.09003E-01	2.08493E-01
4	7170.000	1.66247E-02	1.62944E-02	1.62345E-02	1.61783E-02
5	8870.000	1.52050E-02	1.47503E-02	1.46693E-02	1.45936E-02
6	17800.000	2.61350E-03	2.50916E-03	2.48650E-03	2.46495E-03
7	18000.000	3.66858E-03	3.46657E-03	3.42827E-03	3.39306E-03
8	21000.000	2.71444E-03	2.67711E-03	2.67009E-03	2.66367E-03
9	23700.000	1.52137E-03	1.48821E-03	1.48190E-03	1.47613E-03
10	25900.000	1.20391E-03	1.17341E-03	1.16767E-03	1.16198E-03
11	26400.000	1.22261E-03	1.18691E-03	1.18034E-03	1.17406E-03
12	27000.000	1.64087E-03	1.59619E-03	1.58783E-03	1.58007E-03
13	35300.000	9.61031E-04	9.60052E-04	9.59873E-04	9.59710E-04
14	41000.000	7.11261E-04	6.94038E-04	6.90846E-04	6.87848E-04
15	43200.000	3.79445E-04	3.77025E-04	3.76454E-04	3.75997E-04
16	46820.000	3.74724E-04	3.68761E-04	3.67641E-04	3.66612E-04
17	47300.000	3.72748E-04	3.66112E-04	3.64962E-04	3.63853E-04
18	53400.000	2.98314E-04	2.93142E-04	2.92065E-04	2.91217E-04
19	54200.000	2.79625E-04	2.75836E-04	2.75061E-04	2.74374E-04
20	54400.000	2.75499E-04	2.71994E-04	2.71366E-04	2.70690E-04
21	57450.000	3.62680E-04	3.58056E-04	3.57167E-04	3.56336E-04
22	58000.000	2.52257E-04	2.48059E-04	2.47389E-04	2.46621E-04
23	59500.000	3.37702E-04	3.31350E-04	3.30117E-04	3.29021E-04
24	59950.000	2.36896E-04	2.33103E-04	2.32449E-04	2.31784E-04
25	64100.000	2.91349E-04	2.88013E-04	2.87428E-04	2.86829E-04

TABLE A-IX (Page 5)

DOPPLER BROADENED (300°K) CAPTURE RESONANCE INTEGRALS BY RESONANCE

3. MANGANESE 55 (continued)

RES NO	RES ENERGY	DILUTE	L=0.02000 CM	L=0.02500 CM	L=0.03000 CM
26	65510.000	1.95314E-04	1.92552E-04	1.92140E-04	1.91639E-04
27	66600.000	1.92223E-04	1.89488E-04	1.88958E-04	1.88514E-04
28	69500.000	2.47174E-04	2.42657E-04	2.41838E-04	2.41059E-04
29	70070.000	1.73986E-04	1.71861E-04	1.71502E-04	1.71095E-04
30	72700.000	1.57520E-04	1.55635E-04	1.55301E-04	1.55032E-04
31	73900.000	2.19168E-04	2.16528E-04	2.16032E-04	2.15550E-04
32	81300.000	1.29309E-04	1.28079E-04	1.27789E-04	1.27530E-04
33	84350.000	1.68281E-04	1.67020E-04	1.66751E-04	1.66513E-04
34	96050.000	9.25285E-05	9.15635E-05	9.13932E-05	9.12402E-05
35	98200.000	1.24070E-04	1.22590E-04	1.22341E-04	1.22083E-04
36	103700.000	7.94222E-05	7.87015E-05	7.85867E-05	7.84052E-05
37	104900.000	7.77335E-05	7.73795E-05	7.73417E-05	7.72636E-05
38	107000.000	7.46459E-05	7.40135E-05	7.39198E-05	7.37900E-05
39	109400.000	7.14667E-05	7.11193E-05	7.10375E-05	7.09744E-05
40	110900.000	9.73621E-05	9.68502E-05	9.67630E-05	9.66854E-05
41	116100.000	8.87657E-05	8.78744E-05	8.77091E-05	8.75149E-05
42	118400.000	8.53812E-05	8.46452E-05	8.44721E-05	8.43395E-05
43	123500.000	5.60459E-05	5.56574E-05	5.55582E-05	5.55230E-05
44	127000.000	7.42433E-05	7.39144E-05	7.38546E-05	7.37893E-05
45	128100.000	5.21268E-05	5.19369E-05	5.18663E-05	5.18383E-05
46	129500.000	5.10016E-05	5.07511E-05	5.07004E-05	5.06526E-05
47	131000.000	6.96375E-05	6.89455E-05	6.87828E-05	6.86375E-05
48	142100.000	5.92637E-05	5.87819E-05	5.86638E-05	5.85779E-05
49	151300.000	3.73333E-05	3.71065E-05	3.70591E-05	3.70168E-05
50	155800.000	3.52335E-05	3.50663E-05	3.50421E-05	3.50079E-05
51	158700.000	4.75315E-05	4.72462E-05	4.71691E-05	4.71001E-05
52	166900.000	3.06683E-05	3.05049E-05	3.04483E-05	3.04014E-05
53	172200.000	4.03812E-05	4.01896E-05	4.01699E-05	4.01283E-05
54	176900.000	3.82153E-05	3.79122E-05	3.78513E-05	3.78140E-05
55	179900.000	2.64010E-05	2.62506E-05	2.62284E-05	2.61952E-05
56	181000.000	3.64877E-05	3.62286E-05	3.61542E-05	3.60738E-05
57	184400.000	2.51515E-05	2.50521E-05	2.50152E-05	2.50006E-05
58	186200.000	3.45393E-05	3.44303E-05	3.43888E-05	3.43731E-05
59	188500.000	3.36884E-05	3.35074E-05	3.34413E-05	3.33970E-05
60	193900.000	3.18048E-05	3.15908E-05	3.15364E-05	3.14843E-05
61	197600.000	2.18967E-05	2.18020E-05	2.17661E-05	2.17525E-05

TABLE A-IX (Page 6)

DOPPLER BROADENED (300°K) CAPTURE RESONANCE INTEGRALS BY RESONANCE

3. MANGANESE 55 (continued)

RES NO	RES ENERGY	DILUTE	L=0.01000 CM	L=0.02000 CM	L=0.03000 CM
1	337.000	7.36688E 00	6.26808E 00	5.70170E 00	5.29748E 00
2	1098.000	9.60600E-01	7.65311E-01	6.77318E-01	6.20477E-01
3	2375.000	2.12081E-01	2.10647E-01	2.09529E-01	2.08493E-01
4	7170.000	1.66247E-02	1.64307E-02	1.62944E-02	1.61783E-02
5	8870.000	1.52050E-02	1.49353E-02	1.47503E-02	1.45936E-02
6	17800.000	2.61350E-03	2.55169E-03	2.50916E-03	2.46495E-03
7	18000.000	3.66858E-03	3.55190E-03	3.46657E-03	3.39306E-03
8	21000.000	2.71444E-03	2.69246E-03	2.67711E-03	2.66367E-03
9	23700.000	1.52137E-03	1.50220E-03	1.48821E-03	1.47613E-03
10	25900.000	1.20391E-03	1.18621E-03	1.17341E-03	1.16198E-03
11	26400.000	1.22261E-03	1.20175E-03	1.18691E-03	1.17406E-03
12	27000.000	1.64087E-03	1.61475E-03	1.59619E-03	1.58007E-03
13	35300.000	9.61031E-04	9.60419E-04	9.60052E-04	9.59710E-04
14	41000.000	7.11261E-04	7.01309E-04	6.94038E-04	6.87848E-04
15	43200.000	3.79445E-04	3.78136E-04	3.77025E-04	3.75997E-04
16	46820.000	3.74724E-04	3.70992E-04	3.68761E-04	3.66612E-04
17	47300.000	3.72748E-04	3.68387E-04	3.66112E-04	3.63855E-04
18	53400.000	2.98314E-04	2.95036E-04	2.93142E-04	2.91217E-04
19	54200.000	2.79625E-04	2.77233E-04	2.75836E-04	2.74374E-04
20	54400.000	2.75499E-04	2.73466E-04	2.71994E-04	2.70690E-04
21	57450.000	3.62680E-04	3.60081E-04	3.58056E-04	3.56336E-04
22	58000.000	2.52257E-04	2.49731E-04	2.48059E-04	2.46621E-04
23	59500.000	3.37702E-04	3.33992E-04	3.31350E-04	3.29021E-04
24	59950.000	2.36896E-04	2.34711E-04	2.33103E-04	2.31784E-04
25	64100.000	2.91349E-04	2.89337E-04	2.88013E-04	2.86829E-04
26	65510.000	1.95314E-04	1.93785E-04	1.92552E-04	1.91639E-04
27	66600.000	1.92223E-04	1.90763E-04	1.89488E-04	1.88514E-04
28	69500.000	2.47174E-04	2.44575E-04	2.42657E-04	2.41059E-04
29	70070.000	1.73986E-04	1.72846E-04	1.71861E-04	1.71095E-04
30	72700.000	1.57520E-04	1.56411E-04	1.55635E-04	1.55032E-04
31	73900.000	2.19168E-04	2.17514E-04	2.16528E-04	2.15551E-04
32	81300.000	1.29309E-04	1.28520E-04	1.28079E-04	1.27530E-04
33	84350.000	1.68281E-04	1.67508E-04	1.67020E-04	1.66513E-04
34	96050.000	9.25285E-05	9.20288E-05	9.15635E-05	9.12402E-05
35	98200.000	1.24070E-04	1.23187E-04	1.22590E-04	1.22083E-04
36	103700.000	7.94222E-05	7.89622E-05	7.87015E-05	7.84052E-05
37	104900.000	7.77335E-05	7.77301E-05	7.73795E-05	7.72636E-05
38	107000.000	7.46459E-05	7.41971E-05	7.40135E-05	7.37900E-05
39	109400.000	7.14667E-05	7.14667E-05	7.11193E-05	7.09744E-05
40	110900.000	9.73621E-05	9.70328E-05	9.68502E-05	9.66854E-05
41	116100.000	8.87657E-05	8.81381E-05	8.78744E-05	8.75149E-05
42	118400.000	8.53812E-05	8.49060E-05	8.46452E-05	8.43395E-05
43	123500.000	5.60459E-05	5.58339E-05	5.56574E-05	5.55225E-05
44	127000.000	7.42433E-05	7.40914E-05	7.39144E-05	7.37893E-05
45	128100.000	5.21268E-05	5.21268E-05	5.19369E-05	5.18380E-05
46	129500.000	5.10016E-05	5.09970E-05	5.07511E-05	5.06526E-05
47	131000.000	6.96375E-05	6.93386E-05	6.89455E-05	6.86382E-05
48	142100.000	5.92637E-05	5.89823E-05	5.87819E-05	5.85779E-05
49	151300.000	3.73333E-05	3.73333E-05	3.71065E-05	3.70168E-05
50	155800.000	3.52335E-05	3.52335E-05	3.50663E-05	3.50079E-05

TABLE A-IX (Page 7)

DOPPLER BROADENDE (300°K) CAPTURE RESONANCE INTEGRALS BY RESONANCE

3. MANGANESE 55 (continued)

RES NO	RES ENERGY	DILUTE CM	L=0.01000 CM	L=0.02000 CM	L=0.03000 CM
51	158700.000	4.75315E-05	4.72690E-05	4.72462E-05	4.70997E-05
52	166900.000	3.06683E-05	3.06683E-05	3.05049E-05	3.04014E-05
53	172200.000	4.03812E-05	4.02558E-05	4.01896E-05	4.01283E-05
54	176900.000	3.82153E-05	3.82153E-05	3.79122E-05	3.78140E-05
55	179900.000	2.64010E-05	2.64010E-05	2.62506E-05	2.61952E-05
56	181000.000	3.64877E-05	3.64877E-05	3.62286E-05	3.60738E-05
57	184400.000	2.51515E-05	2.51515E-05	2.50521E-05	2.50006E-05
58	186200.000	3.45393E-05	3.44209E-05	3.44303E-05	3.43731E-05
59	188500.000	3.36884E-05	3.36884E-05	3.35074E-05	3.33970E-05
60	193900.000	3.18048E-05	3.16813E-05	3.15908E-05	3.14843E-05
61	197600.000	2.18967E-05	2.18967E-05	2.18020E-05	2.17525E-05

RES NO	RES ENERGY	DILUTE	L=0.04000 CM	L=0.05000 CM	L=0.06000 CM
1	337.000	7.36688E 00	4.98264E 00	4.73105E 00	4.52200E 00
2	1098.000	9.60600E-01	5.79532E-01	5.48357E-01	5.23589E-01
3	2375.000	2.12081E-01	2.07503E-01	2.06533E-01	2.05583E-01
4	7170.000	1.66247E-02	1.60735E-02	1.59769E-02	1.58874E-02
5	8870.000	1.52050E-02	1.44561E-02	1.43327E-02	1.42201E-02
6	17800.000	2.61350E-03	2.42681E-03	2.39278E-03	2.36192E-03
7	18000.000	3.66858E-03	3.32952E-03	3.27301E-03	3.22155E-03
8	21000.000	2.71444E-03	2.65181E-03	2.64096E-03	2.63082E-03
9	23700.000	1.52137E-03	1.46526E-03	1.45508E-03	1.44566E-03
10	25900.000	1.20391E-03	1.15070E-03	1.14040E-03	1.13101E-03
11	26400.000	1.22261E-03	1.16181E-03	1.15039E-03	1.13995E-03
12	27000.000	1.64087E-03	1.56538E-03	1.55211E-03	1.53989E-03
13	35300.000	9.61031E-04	9.59395E-04	9.59168E-04	9.58913E-04
14	41000.000	7.11261E-04	6.82124E-04	6.76747E-04	6.71746E-04
15	43200.000	3.79445E-04	3.75058E-04	3.74181E-04	3.73347E-04
16	46820.000	3.74724E-04	3.64644E-04	3.62785E-04	3.60898E-04
17	47300.000	3.72748E-04	3.61804E-04	3.59889E-04	3.57768E-04
18	53400.000	2.98314E-04	2.89552E-04	2.87985E-04	2.86492E-04
19	54200.000	2.79625E-04	2.73100E-04	2.71886E-04	2.70737E-04
20	54400.000	2.75499E-04	2.69452E-04	2.68313E-04	2.67216E-04
21	57450.000	3.62680E-04	3.54820E-04	3.53370E-04	3.52033E-04
22	58000.000	2.52257E-04	2.45333E-04	2.44114E-04	2.42955E-04
23	59500.000	3.37702E-04	3.26899E-04	3.24927E-04	3.23028E-04
24	59950.000	2.36896E-04	2.30584E-04	2.29457E-04	2.28388E-04
25	64100.000	2.91349E-04	2.85718E-04	2.84676E-04	2.83711E-04
26	65510.000	1.95314E-04	1.90825E-04	1.90079E-04	1.89354E-04
27	66600.000	1.92223E-04	1.87611E-04	1.86764E-04	1.85986E-04
28	69500.000	2.47174E-04	2.39602E-04	2.38237E-04	2.36914E-04
29	70070.000	1.73986E-04	1.70337E-04	1.69692E-04	1.69052E-04
30	72700.000	1.57520E-04	1.54411E-04	1.53881E-04	1.53369E-04
31	73900.000	2.19168E-04	2.14647E-04	2.13838E-04	2.13058E-04
32	81300.000	1.29309E-04	1.27089E-04	1.26685E-04	1.26291E-04
33	84350.000	1.68281E-04	1.66050E-04	1.65650E-04	1.65283E-04
34	96050.000	9.25285E-05	9.09325E-05	9.06325E-05	9.03587E-05
35	98200.000	1.24070E-04	1.21596E-04	1.21131E-04	1.20714E-04

TABLE A-IX (Page 8)

DOPPLER BROADENED (300°K) CAPTURE RESONANCE INTEGRALS BY RESONANCE

3. MANGANESE 55 (continued)

RES NO	RES ENERGY	DILUTE	L=0.04000 CM	L=0.05000 CM	L=0.06000 CM
36	103700.000	7.94222E-05	7.81755E-05	7.79385E-05	7.77175E-05
37	104900.000	7.77335E-05	7.71068E-05	7.69903E-05	7.68967E-05
38	107000.000	7.46459E-05	7.35709E-05	7.33783E-05	7.31950E-05
39	109400.000	7.14667E-05	7.08343E-05	7.07276E-05	7.06187E-05
40	110900.000	9.73621E-05	9.64917E-05	9.63471E-05	9.61959E-05
41	116100.000	8.87657E-05	8.72074E-05	8.69255E-05	8.66598E-05
42	118400.000	8.53812E-05	8.40799E-05	8.38376E-05	8.36003E-05
43	123500.000	5.60459E-05	5.53579E-05	5.52388E-05	5.51118E-05
44	127000.000	7.42433E-05	7.36796E-05	7.35771E-05	7.34765E-05
45	128100.000	5.21268E-05	5.17500E-05	5.16739E-05	5.16086E-05
46	129500.000	5.10016E-05	5.05693E-05	5.04976E-05	5.04084E-05
47	131000.000	6.96375E-05	6.83894E-05	6.81641E-05	6.79510E-05
48	142100.000	5.92637E-05	5.84064E-05	5.82418E-05	5.80995E-05
49	151300.000	3.73333E-05	3.69242E-05	3.68525E-05	3.67813E-05
50	155800.000	3.52335E-05	3.49369E-05	3.48949E-05	3.48398E-05
51	158700.000	4.75315E-05	4.69964E-05	4.68834E-05	4.67994E-05
52	166900.000	3.06683E-05	3.03354E-05	3.02860E-05	3.02261E-05
53	172200.000	4.03812E-05	4.00675E-05	4.00137E-05	3.99557E-05
54	176900.000	3.82153E-05	3.77071E-05	3.76026E-05	3.75199E-05
55	179900.000	2.64010E-05	2.61458E-05	2.60936E-05	2.60515E-05
56	181000.000	3.64877E-05	3.59869E-05	3.59087E-05	3.58178E-05
57	184400.000	2.51515E-05	2.49793E-05	2.49357E-05	2.48962E-05
58	186200.000	3.45393E-05	3.43222E-05	3.42939E-05	3.42520E-05
59	188500.000	3.36884E-05	3.33378E-05	3.32677E-05	3.32057E-05
60	193900.000	3.18048E-05	3.13951E-05	3.13341E-05	3.12641E-05
61	197600.000	2.18967E-05	2.17180E-05	2.16907E-05	2.16533E-05

RES NO	RES ENERGY	DILUTE	L=0.02500 CM	L=0.05000 CM	L=0.07500 CM
1	337.000	7.36688E 00	5.48505E 00	4.73105E 00	4.26501E 00
2	1098.000	9.60600E-01	6.46290E-01	5.48357E-01	4.94457E-01
3	2375.000	2.12081E-01	2.09003E-01	2.06533E-01	2.04196E-01
4	7170.000	1.66247E-02	1.62345E-02	1.59769E-02	1.57637E-02
5	8870.000	1.52050E-02	1.46693E-02	1.43327E-02	1.40672E-02
6	17800.000	2.61350E-03	2.48650E-03	2.39278E-03	2.31982E-03
7	18000.000	3.66858E-03	3.42827E-03	3.27301E-03	3.15183E-03
8	21000.000	2.71444E-03	2.67009E-03	2.64096E-03	2.61687E-03
9	23700.000	1.52137E-03	1.48190E-03	1.45508E-03	1.43272E-03
10	25900.000	1.20391E-03	1.16767E-03	1.14040E-03	1.11779E-03
11	26400.000	1.22261E-03	1.18034E-03	1.15039E-03	1.12563E-03
12	27000.000	1.64087E-03	1.58783E-03	1.55211E-03	1.52320E-03
13	35300.000	9.61031E-04	9.59873E-04	9.59168E-04	9.58612E-04
14	41000.000	7.11261E-04	6.90846E-04	6.76747E-04	6.64878E-04
15	43200.000	3.79445E-04	3.76454E-04	3.74181E-04	3.72213E-04
16	46820.000	3.74724E-04	3.67641E-04	3.62785E-04	3.58117E-04
17	47300.000	3.72748E-04	3.64962E-04	3.59888E-04	3.54600E-04
18	53400.000	2.98314E-04	2.92065E-04	2.87985E-04	2.84203E-04
19	54200.000	2.79625E-04	2.75061E-04	2.71895E-04	2.69011E-04
20	54400.000	2.75499E-04	2.71332E-04	2.68303E-04	2.65637E-04

TABLE A-IX (Page 9)

DOPPLER BROADENED (300°K) CAPTURE RESONANCE INTEGRALS BY RESONANCE

3. MANGANESE 55 (continued)

RES NO	RES ENERGY	DILUTE	L=0.02500 CM	L=0.05000 CM	L=0.07500 CM
21	57450.000	3.62680E-04	3.57168E-04	3.53370E-04	3.50163E-04
22	58000.000	2.52257E-04	2.47334E-04	2.44114E-04	2.41176E-04
23	59500.000	3.37702E-04	3.30117E-04	3.24927E-04	3.20336E-04
24	59950.000	2.36896E-04	2.32449E-04	2.29457E-04	2.26819E-04
25	64100.000	2.91349E-04	2.87428E-04	2.84676E-04	2.82376E-04
26	65510.000	1.95314E-04	1.92140E-04	1.90079E-04	1.88305E-04
27	66600.000	1.92223E-04	1.88958E-04	1.86764E-04	1.84878E-04
28	69500.000	2.47174E-04	2.41836E-04	2.38237E-04	2.34982E-04
29	70070.000	1.73986E-04	1.71502E-04	1.69692E-04	1.68171E-04
30	72700.000	1.57520E-04	1.55301E-04	1.53881E-04	1.52636E-04
31	73900.000	2.19168E-04	2.16032E-04	2.13838E-04	2.11975E-04
32	81300.000	1.29309E-04	1.27789E-04	1.26685E-04	1.25751E-04
33	84350.000	1.68281E-04	1.66751E-04	1.65650E-04	1.64749E-04
34	96050.000	9.25285E-05	9.13932E-05	9.06325E-05	8.99807E-05
35	98200.000	1.24070E-04	1.22341E-04	1.21131E-04	1.20104E-04
36	103700.000	7.94222E-05	7.85867E-05	7.79385E-05	7.74205E-05
37	104900.000	7.77335E-05	7.73417E-05	7.69903E-05	7.67309E-05
38	107000.000	7.46459E-05	7.39198E-05	7.33783E-05	7.29349E-05
39	109400.000	7.14667E-05	7.10370E-05	7.07276E-05	7.04679E-05
40	110900.000	9.73621E-05	9.67630E-05	9.63471E-05	9.59899E-05
41	116100.000	8.87657E-05	8.77091E-05	8.69255E-05	8.62768E-05
42	118400.000	8.53812E-05	8.44721E-05	8.38376E-05	8.32824E-05
43	123500.000	5.60459E-05	5.55582E-05	5.52388E-05	5.49516E-05
44	127000.000	7.42433E-05	7.38546E-05	7.35771E-05	7.33418E-05
45	128100.000	5.21268E-05	5.18667E-05	5.16739E-05	5.15075E-05
46	129500.000	5.10016E-05	5.07004E-05	5.04976E-05	5.03048E-05
47	131000.000	6.96375E-05	6.87828E-05	6.81641E-05	6.76499E-05
48	142100.000	5.92637E-05	5.86638E-05	5.82417E-05	5.78889E-05
49	151300.000	3.73333E-05	3.70591E-05	3.68525E-05	3.66840E-05
50	155800.000	3.52335E-05	3.50425E-05	3.48948E-05	3.47638E-05
51	158700.000	4.75315E-05	4.71691E-05	4.68834E-05	4.66613E-05
52	166900.000	3.06683E-05	3.04483E-05	3.02860E-05	3.01486E-05
53	172200.000	4.03812E-05	4.01699E-05	4.00137E-05	3.98767E-05
54	176900.000	3.82153E-05	3.78513E-05	3.76026E-05	3.73952E-05
55	179900.000	2.64010E-05	2.62284E-05	2.60936E-05	2.59886E-05
56	181000.000	3.64877E-05	3.61547E-05	3.59087E-05	3.56963E-05
57	184400.000	2.51515E-05	2.50152E-05	2.49357E-05	2.48526E-05
58	186200.000	3.45393E-05	3.43888E-05	3.42939E-05	3.42023E-05
59	188500.000	3.36884E-05	3.34413E-05	3.32677E-05	3.31194E-05
60	193900.000	3.18048E-05	3.15364E-05	3.13341E-05	3.11659E-05
61	197600.000	2.18967E-05	2.17661E-05	2.16907E-05	2.16070E-05

TABLE A-IX (Page 10)

DOPPLER BROADENED (300°K) CAPTURE RESONANCE INTEGRALS BY RESONANCE

4. COBALT 59

RES NO	RES ENERGY	DILUTE	L=0.00500 CM	L=0.01000 CM	L=0.01500 CM
1	132.000	5.48418E 01	3.75417E 01	3.18957E 01	2.85859E 01
2	1380.000	5.13580E-03	5.13580E-03	5.13580E-03	5.13580E-03
3	2264.000	4.11332E-03	4.11332E-03	4.11332E-03	4.07342E-03
4	2860.000	1.86347E-02	1.80924E-02	1.83896E-02	1.83358E-02
5	3980.000	4.51140E-03	4.51140E-03	4.51140E-03	4.45377E-03
6	4322.000	6.15549E-02	5.92790E-02	5.77353E-02	5.64892E-02
7	5015.000	7.13315E-02	7.12084E-02	7.11117E-02	7.10254E-02
8	6390.000	9.86439E-03	9.61765E-03	9.42841E-03	9.26714E-03
9	8050.000	8.52568E-03	8.25088E-03	8.04872E-03	7.87475E-03
10	8740.000	5.99699E-03	5.94545E-03	5.90513E-03	5.86964E-03
11	9700.000	9.64854E-03	9.49456E-03	9.37696E-03	9.26887E-03
12	10700.000	1.19957E-02	1.16346E-02	1.13726E-02	1.11451E-02
13	11850.000	3.32632E-03	3.28105E-03	3.24671E-03	3.21485E-03
14	13280.000	7.86447E-03	7.68930E-03	7.57089E-03	7.45129E-03
15	15640.000	3.64837E-03	3.58090E-03	3.53223E-03	3.48970E-03
16	16920.000	4.02120E-03	3.94641E-03	3.89261E-03	3.84560E-03
17	19750.000	2.03188E-03	2.01720E-03	2.00468E-03	1.99432E-03
18	21950.000	1.97506E-03	1.96573E-03	1.95947E-03	1.95353E-03
19	22510.000	2.41132E-03	2.37956E-03	2.35708E-03	2.33701E-03
20	24460.000	1.58932E-03	1.57643E-03	1.56575E-03	1.55718E-03
21	25160.000	1.92829E-03	1.90117E-03	1.88180E-03	1.86494E-03
22	25950.000	1.75651E-03	1.72952E-03	1.71164E-03	1.69596E-03
23	27350.000	1.63170E-03	1.61007E-03	1.59420E-03	1.58050E-03
24	29410.000	1.05205E-03	1.04066E-03	1.03322E-03	1.02678E-03
25	30110.000	1.34824E-03	1.33423E-03	1.32457E-03	1.31576E-03
26	31360.000	9.64894E-04	9.55063E-04	9.48208E-04	9.41937E-04
27	31760.000	8.95156E-04	8.86425E-04	8.80953E-04	8.75865E-04
28	32750.000	8.84247E-04	8.75457E-04	8.68961E-04	8.63380E-04
29	33050.000	1.10624E-03	1.09087E-03	1.08085E-03	1.07206E-03
30	34510.000	7.31577E-04	7.26861E-04	7.23441E-04	7.20231E-04
31	34900.000	1.00308E-03	9.93392E-04	9.85487E-04	9.78813E-04
32	35420.000	6.86296E-04	6.82688E-04	6.79370E-04	6.76665E-04
33	36750.000	6.88286E-04	6.81067E-04	6.76932E-04	6.72969E-04
34	39800.000	5.90699E-04	5.85068E-04	5.81234E-04	5.78041E-04
35	40500.000	5.02273E-04	5.00127E-04	4.98939E-04	4.97667E-04
36	41500.000	6.98644E-04	6.90206E-04	6.85446E-04	6.80935E-04
37	42400.000	4.30500E-04	4.29544E-04	4.28554E-04	4.27809E-04
38	43700.000	4.16833E-04	4.15302E-04	4.14663E-04	4.13825E-04
39	45150.000	5.99420E-04	5.94520E-04	5.90616E-04	5.87351E-04
40	46000.000	5.78006E-04	5.74377E-04	5.71471E-04	5.68976E-04
41	47300.000	4.25317E-04	4.23121E-04	4.22133E-04	4.21045E-04
42	50400.000	3.72912E-04	3.69988E-04	3.67993E-04	3.66326E-04
43	51400.000	4.62916E-04	4.60072E-04	4.57812E-04	4.55998E-04
44	53000.000	4.31471E-04	4.27379E-04	4.24615E-04	4.22261E-04
45	53900.000	3.27436E-04	3.26052E-04	3.24673E-04	3.23670E-04
46	56400.000	2.98614E-04	2.96591E-04	2.95288E-04	2.94217E-04
47	57800.000	2.78593E-04	2.76414E-04	2.75191E-04	2.74319E-04
48	59000.000	2.73139E-04	2.71805E-04	2.70701E-04	2.69753E-04
49	59900.000	3.39437E-04	3.36799E-04	3.34685E-04	3.33002E-04
50	61200.000	3.24474E-04	3.22302E-04	3.19914E-04	3.18324E-04

TABLE A-IX (Page 11)

DOPPLER BROADENED (300°K) CAPTURE RESONANCE INTEGRALS BY RESONANCE

4. COBALT 59 (continued)

RES NO	RES ENERGY	DILUTE	L=0.00500 CM	L=0.01000 CM	L=0.01500 CM
51	62900.000	2.38236E-04	2.36962E-04	2.35625E-04	2.34601E-04
52	66300.000	2.15307E-04	2.14079E-04	2.12976E-04	2.12208E-04
53	70400.000	2.46415E-04	2.44926E-04	2.43602E-04	2.42630E-04
54	71360.000	1.85285E-04	1.84101E-04	1.83407E-04	1.82672E-04
55	71900.000	1.83936E-04	1.83335E-04	1.82662E-04	1.81915E-04
56	72500.000	2.31988E-04	2.30117E-04	2.29345E-04	2.28274E-04
57	74700.000	1.68700E-04	1.68700E-04	1.67057E-04	1.66394E-04
58	77200.000	2.05075E-04	2.04170E-04	2.03109E-04	2.02313E-04

RES NO	RES ENERGY	DILUTE	L=0.02000 CM	L=0.02500 CM	L=0.03000 CM
1	132.000	5.48418E 01	2.63238E 01	2.46422E 01	2.33303E 01
2	1380.000	5.13580E-03	5.13580E-03	5.10571E-03	5.10974E-03
3	2264.000	4.11332E-03	4.11332E-03	4.09401E-03	4.08851E-03
4	2860.000	1.86347E-02	1.82508E-02	1.82181E-02	1.81370E-02
5	3980.000	4.51140E-03	4.47662E-03	4.47057E-03	4.47918E-03
6	4322.000	6.15549E-02	5.54274E-02	5.44942E-02	5.36599E-02
7	5015.000	7.13315E-02	7.09466E-02	7.08713E-02	7.07988E-02
8	6390.000	9.86439E-03	9.11786E-03	8.98388E-03	8.85789E-03
9	8050.000	8.52568E-03	7.72402E-03	7.58997E-03	7.46757E-03
10	8740.000	5.99699E-03	5.83513E-03	5.80284E-03	5.77262E-03
11	9700.000	9.64854E-03	9.17506E-03	9.08568E-03	8.99978E-03
12	10700.000	1.19957E-02	1.09480E-02	1.07722E-02	1.06118E-02
13	11850.000	3.32632E-03	3.18687E-03	3.16066E-03	3.13501E-03
14	13280.000	7.86447E-03	7.34182E-03	7.24488E-03	7.15626E-03
15	15640.000	3.64837E-03	3.44891E-03	3.41194E-03	3.37790E-03
16	16920.000	4.02120E-03	3.80223E-03	3.76300E-03	3.72695E-03
17	19750.000	2.03188E-03	1.98460E-03	1.97488E-03	1.96581E-03
18	21950.000	1.97506E-03	1.94833E-03	1.94340E-03	1.93890E-03
19	22510.000	2.41132E-03	2.31894E-03	2.30184E-03	2.28599E-03
20	24460.000	1.58932E-03	1.54919E-03	1.54180E-03	1.53489E-03
21	25160.000	1.92829E-03	1.84930E-03	1.83448E-03	1.82061E-03
22	25950.000	1.75651E-03	1.67915E-03	1.66243E-03	1.64745E-03
23	27350.000	1.63170E-03	1.56790E-03	1.55585E-03	1.54454E-03
24	29410.000	1.05205E-03	1.02082E-03	1.01495E-03	1.00869E-03
25	30110.000	1.34824E-03	1.30780E-03	1.30040E-03	1.29336E-03
26	31360.000	9.64894E-04	9.36190E-04	9.30999E-04	9.25920E-04
27	31760.000	8.95156E-04	8.71224E-04	8.66813E-04	8.62316E-04
28	32750.000	8.84247E-04	8.58167E-04	8.53412E-04	8.48824E-04
29	33050.000	1.10624E-03	1.06399E-03	1.05541E-03	1.04692E-03
30	34510.000	7.31577E-04	7.17239E-04	7.14451E-04	7.11761E-04
31	34900.000	1.00308E-03	9.72823E-04	9.67252E-04	9.61935E-04
32	35420.000	6.86296E-04	6.74211E-04	6.71867E-04	6.69629E-04
33	36750.000	6.88286E-04	6.69522E-04	6.66283E-04	6.63101E-04
34	39800.000	5.90699E-04	5.75118E-04	5.72456E-04	5.69872E-04
35	40500.000	5.02273E-04	4.96427E-04	4.95326E-04	4.94206E-04

TABLE A-IX (Page 12)

DOPPLER BROADENED (300°K) CAPTURE RESONANCE INTEGRALS BY RESONANCE

4. COBALT 59 (continued)

RES NO	RES ENERGY	DILUTE	L=0.02000 CM	L=0.02500 CM	L=0.03000 CM
36	41500.000	6.98644E-04	6.76908E-04	6.73040E-04	6.68857E-04
37	42400.000	4.30500E-04	4.26931E-04	4.26188E-04	4.25549E-04
38	43700.000	4.16833E-04	4.13024E-04	4.12330E-04	4.11587E-04
39	45150.000	5.99420E-04	5.84366E-04	5.81602E-04	5.78983E-04
40	46000.000	5.78006E-04	5.66721E-04	5.64644E-04	5.62663E-04
41	47300.000	4.25317E-04	4.19979E-04	4.18928E-04	4.17978E-04
42	50400.000	3.72912E-04	3.64704E-04	3.63253E-04	3.61886E-04
43	51400.000	4.62916E-04	4.54204E-04	4.52605E-04	4.51080E-04
44	53000.000	4.31471E-04	4.20106E-04	4.18123E-04	4.16251E-04
45	53900.000	3.27436E-04	3.22669E-04	3.21772E-04	3.20994E-04
46	56400.000	2.98614E-04	2.93161E-04	2.92130E-04	2.91181E-04
47	57800.000	2.78593E-04	2.73395E-04	2.72483E-04	2.71667E-04
48	59000.000	2.73139E-04	2.68798E-04	2.68023E-04	2.67261E-04
49	59900.000	3.39437E-04	3.31470E-04	3.29994E-04	3.28640E-04
50	61200.000	3.24474E-04	3.16873E-04	3.15520E-04	3.14245E-04
51	62900.000	2.38236E-04	2.33804E-04	2.32998E-04	2.32299E-04
52	66300.000	2.15307E-04	2.11520E-04	2.10795E-04	2.10143E-04
53	70400.000	2.46415E-04	2.41673E-04	2.40819E-04	2.39973E-04
54	71360.000	1.85285E-04	1.82174E-04	1.81620E-04	1.81084E-04
55	71900.000	1.83936E-04	1.81443E-04	1.80981E-04	1.80549E-04
56	72500.000	2.31988E-04	2.27356E-04	2.26509E-04	2.25749E-04
57	74700.000	1.68700E-04	1.65957E-04	1.65520E-04	1.65045E-04
58	77200.000	2.05075E-04	2.01648E-04	2.00989E-04	2.00399E-04

RES NO	RES ENERGY	DILUTE	L=0.02500 CM	L=0.05000 CM	L=0.07500 CM
1	132.000	5.48418E 01	2.46422E 01	1.99779E 01	1.76719E 01
2	1380.000	5.13580E-03	5.10571E-03	5.09307E-03	5.08196E-03
3	2264.000	4.11332E-03	4.09401E-03	4.07932E-03	4.06684E-03
4	2860.000	1.86347E-02	1.82181E-02	1.79044E-02	1.77065E-02
5	3980.000	4.51140E-03	4.47057E-03	4.45513E-03	4.43626E-03
6	4322.000	6.15549E-02	5.44942E-02	5.10096E-02	4.86103E-02
7	5015.000	7.13315E-02	7.08713E-02	7.05293E-02	7.02188E-02
8	6390.000	9.86439E-03	8.98388E-03	8.40958E-03	7.94996E-03
9	8050.000	8.52568E-03	7.58997E-03	7.06091E-03	6.66813E-03
10	8740.000	5.99699E-03	5.80284E-03	5.66275E-03	5.54026E-03
11	9700.000	9.64854E-03	9.08568E-03	8.70323E-03	8.38440E-03
12	10700.000	1.19957E-02	1.07722E-02	1.00779E-02	9.56456E-03
13	11850.000	3.32632E-03	3.16066E-03	3.04575E-03	2.94931E-03
14	13280.000	7.86447E-03	7.24488E-03	6.85823E-03	6.56137E-03
15	15640.000	3.64837E-03	3.41194E-03	3.26234E-03	3.14648E-03
16	16920.000	4.02120E-03	3.76300E-03	3.60489E-03	3.48392E-03
17	19750.000	2.03188E-03	1.97488E-03	1.93392E-03	1.89876E-03
18	21950.000	1.97506E-03	1.94340E-03	1.92281E-03	1.90590E-03
19	22510.000	2.41132E-03	2.30184E-03	2.23175E-03	2.17730E-03
20	24460.000	1.58932E-03	1.54180E-03	1.51023E-03	1.48483E-03

TABLE A-IX (Page 13)

DOPPLER BROADENED (300°K) CAPTURE RESONANCE INTEGRALS BY RESONANCE

4. COBALT 59 (continued)

RES NO	RES ENERGY	DILUTE	L=0.02500 CM	L=0.05000 CM	L=0.07500 CM
21	25160.000	1.92829E-03	1.83448E-03	1.77323E-03	1.72552E-03
22	25950.000	1.75651E-03	1.66243E-03	1.59673E-03	1.54560E-03
23	27350.000	1.63170E-03	1.55585E-03	1.50570E-03	1.46650E-03
24	29410.000	1.05205E-03	1.01495E-03	9.86227E-04	9.63329E-04
25	30110.000	1.34824E-03	1.30040E-03	1.26865E-03	1.24353E-03
26	31360.000	9.64894E-04	9.30999E-04	9.07435E-04	8.88357E-04
27	31760.000	8.95156E-04	8.66813E-04	8.45443E-04	8.28004E-04
28	32750.000	8.84247E-04	8.53412E-04	8.31821E-04	8.14269E-04
29	33050.000	1.10624E-03	1.05541E-03	1.01844E-03	9.89943E-04
30	34510.000	7.31577E-04	7.14451E-04	7.01683E-04	6.91262E-04
31	34900.000	1.00308E-03	9.67252E-04	9.42993E-04	9.23624E-04
32	35420.000	6.86296E-04	6.71867E-04	6.61082E-04	6.52151E-04
33	36750.000	6.88286E-04	6.66283E-04	6.49406E-04	6.35323E-04
34	39800.000	5.90699E-04	5.72456E-04	5.58868E-04	5.47213E-04
35	40500.000	5.02273E-04	4.95326E-04	4.89978E-04	4.85330E-04
36	41500.000	6.98644E-04	6.73040E-04	6.53206E-04	6.37507E-04
37	42400.000	4.30500E-04	4.26188E-04	4.23022E-04	4.20272E-04
38	43700.000	4.16833E-04	4.12330E-04	4.08895E-04	4.05991E-04
39	45150.000	5.99420E-04	5.81602E-04	5.69404E-04	5.59384E-04
40	46000.000	5.78006E-04	5.64644E-04	5.55624E-04	5.48173E-04
41	47300.000	4.25317E-04	4.18928E-04	4.14611E-04	4.10986E-04
42	50400.000	3.72912E-04	3.63253E-04	3.56734E-04	3.50793E-04
43	51400.000	4.62916E-04	4.52605E-04	4.45636E-04	4.39816E-04
44	53000.000	4.31471E-04	4.18123E-04	4.08521E-04	4.00221E-04
45	53900.000	3.27436E-04	3.21772E-04	3.17974E-04	3.14740E-04
46	56400.000	2.98614E-04	2.92130E-04	2.87764E-04	2.83897E-04
47	57800.000	2.78593E-04	2.72483E-04	2.68578E-04	2.64489E-04
48	59000.000	2.73139E-04	2.68023E-04	2.64535E-04	2.61537E-04
49	59900.000	3.39437E-04	3.29994E-04	3.23503E-04	3.17724E-04
50	61200.000	3.24474E-04	3.15520E-04	3.09358E-04	3.03740E-04
51	62900.000	2.38236E-04	2.32998E-04	2.29672E-04	2.26422E-04
52	66300.000	2.15307E-04	2.10795E-04	2.07851E-04	2.05145E-04
53	70400.000	2.46415E-04	2.40819E-04	2.37025E-04	2.33665E-04
54	71360.000	1.85285E-04	1.81620E-04	1.79282E-04	1.77127E-04
55	71900.000	1.83936E-04	1.80981E-04	1.78958E-04	1.77237E-04
56	72500.000	2.31988E-04	2.26509E-04	2.22889E-04	2.19554E-04
57	74700.000	1.68700E-04	1.65520E-04	1.63506E-04	1.61678E-04
58	77200.000	2.05075E-04	2.00989E-04	1.98244E-04	1.95859E-04

TABLE A-IX (Page 14)

DOPPLER BROADENED (300°K) CAPTURE RESONANCE INTEGRALS BY RESONANCE

4. COBALT 59 (continued)

RES NO	RES ENERGY	DILUTE	L=0.10000 CM	L=0.12500 CM	L=0.15000 CM
1	132.000	5.48418E 01	1.62051E 01	1.51449E 01	1.43245E 01
2	1380.000	5.13580E-03	5.06963E-03	5.05630E-03	5.04388E-03
3	2264.000	4.11332E-03	4.05617E-03	4.04553E-03	4.03502E-03
4	2860.000	1.86347E-02	1.86347E-02	1.71468E-02	1.69136E-02
5	3980.000	4.51140E-03	4.41780E-03	4.39926E-03	4.38317E-03
6	4322.000	6.15549E-02	4.67862E-02	4.53249E-02	4.41159E-02
7	5015.000	7.13315E-02	6.99244E-02	6.96431E-02	6.93708E-02
8	6390.000	9.86439E-03	7.56717E-03	7.23952E-03	6.95449E-03
9	8050.000	8.52568E-03	6.35817E-03	6.10449E-03	5.89272E-03
10	8740.000	5.99699E-03	5.42985E-03	5.32836E-03	5.23398E-03
11	9700.000	9.64854E-03	8.10862E-03	7.86559E-03	7.64990E-03
12	10700.000	1.19957E-02	9.15924E-03	8.82835E-03	8.55232E-03
13	11850.000	3.32632E-03	2.86443E-03	2.78889E-03	2.72075E-03
14	13280.000	7.86447E-03	6.31552E-03	6.10330E-03	5.91962E-03
15	15640.000	3.64837E-03	3.05084E-03	2.96908E-03	2.89771E-03
16	16920.000	4.02120E-03	3.38539E-03	3.30237E-03	3.23130E-03
17	19750.000	2.03188E-03	1.86753E-03	1.83867E-03	1.81193E-03
18	21950.000	1.97506E-03	1.89157E-03	1.87909E-03	1.86801E-03
19	22510.000	2.41132E-03	2.13219E-03	2.09372E-03	2.06034E-03
20	24460.000	1.58932E-03	1.46346E-03	1.44492E-03	1.42853E-03
21	25160.000	1.92829E-03	1.68577E-03	1.65168E-03	1.62191E-03
22	25950.000	1.75651E-03	1.50258E-03	1.46519E-03	1.43161E-03
23	27350.000	1.63170E-03	1.43370E-03	1.40548E-03	1.38074E-03
24	29410.000	1.05205E-03	9.43722E-04	9.26488E-04	9.10940E-04
25	30110.000	1.34824E-03	1.22253E-03	1.20438E-03	1.18845E-03
26	31360.000	9.64894E-04	8.72223E-04	8.58091E-04	8.45492E-04
27	31760.000	8.95156E-04	8.12742E-04	7.99281E-04	7.87150E-04
28	32750.000	8.84247E-04	7.99413E-04	7.86399E-04	7.74773E-04
29	33050.000	1.10624E-03	9.65963E-04	9.45117E-04	9.26676E-04
30	34510.000	7.31577E-04	6.81692E-04	6.73042E-04	6.65231E-04
31	34900.000	1.00308E-03	9.07358E-04	8.93224E-04	8.80735E-04
32	35420.000	6.86296E-04	6.43935E-04	6.36417E-04	6.29640E-04
33	36750.000	6.88286E-04	6.23488E-04	6.13125E-04	6.03812E-04
34	39800.000	5.90699E-04	5.37402E-04	5.28865E-04	5.21176E-04
35	40500.000	5.02273E-04	4.81327E-04	4.77539E-04	4.73979E-04
36	41500.000	6.98644E-04	6.24395E-04	6.12895E-04	6.02636E-04
37	42400.000	4.30500E-04	4.17713E-04	4.15350E-04	4.13140E-04
38	43700.000	4.16833E-04	4.03399E-04	4.00958E-04	3.98640E-04
39	45150.000	5.99420E-04	5.50892E-04	5.43486E-04	5.36885E-04
40	46000.000	5.78006E-04	5.41865E-04	5.36365E-04	5.31487E-04
41	47300.000	4.25317E-04	4.07826E-04	4.05039E-04	4.02545E-04
42	50400.000	3.72912E-04	3.45720E-04	3.41261E-04	3.37274E-04
43	51400.000	4.62916E-04	4.34860E-04	4.30525E-04	4.26672E-04
44	53000.000	4.31471E-04	3.93251E-04	3.87201E-04	3.81766E-04
45	53900.000	3.27436E-04	3.11879E-04	3.09354E-04	3.07085E-04

TABLE A-IX (Page 15)

DOPPLER BROADENED (300°K) CAPTURE RESONANCE INTEGRALS BY RESONANCE

4. COBALT 59 (continued)

RES NO	RES ENERGY	DILUTE	L=0.10000 CM	L=0.12500 CM	L=0.15000 CM
46	56400.000	2.98614E-04	2.80517E-04	2.77527E-04	2.74839E-04
47	57800.000	2.78593E-04	2.60954E-04	2.57857E-04	2.55071E-04
48	59000.000	2.73139E-04	2.58875E-04	2.56526E-04	2.54406E-04
49	59900.000	3.39437E-04	3.12840E-04	3.08570E-04	3.04763E-04
50	61200.000	3.24474E-04	2.99011E-04	2.94882E-04	2.91206E-04
51	62900.000	2.38236E-04	2.23447E-04	2.20857E-04	2.18538E-04
52	66300.000	2.15307E-04	2.02631E-04	2.00425E-04	1.98448E-04
53	70400.000	2.46415E-04	2.30774E-04	2.28224E-04	2.25938E-04
54	71360.000	1.85285E-04	1.75012E-04	1.73162E-04	1.71503E-04
55	71900.000	1.83936E-04	1.75682E-04	1.74281E-04	1.73018E-04
56	72500.000	2.31988E-04	2.16672E-04	2.14143E-04	2.11878E-04
57	74700.000	1.68700E-04	1.59807E-04	1.58165E-04	1.56695E-04
58	77200.000	2.05075E-04	1.93746E-04	1.91888E-04	1.90218E-04

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DOPPLER BROADENED (300°K) CAPTURE RESONANCE INTEGRALS BY RESONANCE

5. COPPER 63

RES NO	RES ENERGY	DILUTE	L=0.00500 CM	L=0.01000 CM	L=0.01500 CM
1	577.000	2.58631E 00	2.19800E 00	1.97362E 00	1.80774E 00
2	2010.000	2.07040E-01	1.98878E-01	1.93232E-01	1.88667E-01
3	2660.000	1.77791E-01	1.65299E-01	1.56948E-01	1.50343E-01
4	4860.000	3.45061E-02	3.34578E-02	3.26731E-02	3.19690E-02
5	5390.000	4.79340E-02	4.60635E-02	4.47005E-02	4.35861E-02
6	5820.000	3.95845E-02	3.80461E-02	3.68093E-02	3.58213E-02
7	7236.000	1.03997E-02	1.03230E-02	1.02590E-02	1.02031E-02
8	7640.000	1.38381E-02	1.35425E-02	1.33477E-02	1.31471E-02
9	7940.000	2.22400E-02	2.16549E-02	2.12422E-02	2.08767E-02
10	9200.000	1.64323E-02	1.59776E-02	1.56498E-02	1.53503E-02
11	9930.000	8.53627E-03	8.41002E-03	8.31943E-03	8.23965E-03
12	10850.000	1.18794E-02	1.15999E-02	1.14062E-02	1.12246E-02
13	12540.000	5.26072E-03	5.18166E-03	5.12886E-03	5.08291E-03
14	13170.000	8.07191E-03	7.90928E-03	7.79537E-03	7.69204E-03
15	13700.000	4.47550E-03	4.41656E-03	4.37679E-03	4.34146E-03
16	14900.000	3.77053E-03	3.72146E-03	3.68902E-03	3.66043E-03
17	15600.000	5.62618E-03	5.52065E-03	5.45117E-03	5.38594E-03
18	16100.000	3.17293E-03	3.13193E-03	3.10810E-03	3.08599E-03
19	17880.000	4.38573E-03	4.31575E-03	4.26764E-03	4.22436E-03
20	18120.000	4.27032E-03	4.20249E-03	4.15618E-03	4.11461E-03
21	21040.000	3.17450E-03	3.13279E-03	3.10350E-03	3.07705E-03
22	21250.000	3.11206E-03	3.07060E-03	3.04292E-03	3.01716E-03
23	22820.000	2.69770E-03	2.66394E-03	2.63927E-03	2.61830E-03
24	24800.000	2.27464E-03	2.24491E-03	2.22480E-03	2.20694E-03
25	25600.000	1.28991E-03	1.28262E-03	1.27787E-03	1.27282E-03
26	26500.000	1.99894E-03	1.97669E-03	1.95898E-03	1.94485E-03
27	28200.000	1.05666E-03	1.04960E-03	1.04335E-03	1.03846E-03
28	29700.000	1.59591E-03	1.58090E-03	1.57057E-03	1.56111E-03
29	31200.000	8.66427E-04	8.61843E-04	8.56641E-04	8.53445E-04
30	33200.000	1.27808E-03	1.26808E-03	1.26093E-03	1.25438E-03
31	36400.000	1.06311E-03	1.05491E-03	1.04917E-03	1.04423E-03
32	42200.000	7.91737E-04	7.87896E-04	7.84251E-04	7.81402E-04

TABLE A-IX (Page 17)

DOPPLER BROADENED (300°K) CAPTURE RESONANCE INTEGRALS BY RESONANCE

5. COPPER 63 (continued)

RES NO	RES ENERGY	DILUTE	L=0.02000 CM	L=0.02500 CM	L=0.03000 CM
1	577.000	2.58631E 00	1.67768E 00	1.57197E 00	1.48385E 00
2	2010.000	2.07040E-01	1.84773E-01	1.81339E-01	1.78261E-01
3	2660.000	1.77791E-01	1.44727E-01	1.39734E-01	1.35266E-01
4	4860.000	3.45061E-02	3.13644E-02	3.08283E-02	3.03371E-02
5	5390.000	4.79340E-02	4.26298E-02	4.17788E-02	4.10104E-02
6	5820.000	3.95845E-02	3.49757E-02	3.42206E-02	3.35373E-02
7	7236.000	1.03997E-02	1.01491E-02	1.00984E-02	1.00519E-02
8	7640.000	1.38381E-02	1.29583E-02	1.27918E-02	1.26394E-02
9	7940.000	2.22400E-02	2.05578E-02	2.02721E-02	2.00121E-02
10	9200.000	1.64323E-02	1.50909E-02	1.48589E-02	1.46478E-02
11	9930.000	8.53627E-03	8.16590E-03	8.09598E-03	8.03087E-03
12	10850.000	1.18794E-02	1.10641E-02	1.09196E-02	1.07874E-02
13	12540.000	5.26072E-03	5.03839E-03	4.99221E-03	4.94848E-03
14	13170.000	8.07191E-03	7.59522E-03	7.50817E-03	7.42820E-03
15	13700.000	4.47550E-03	4.30862E-03	4.27688E-03	4.24607E-03
16	14900.000	3.77053E-03	3.63337E-03	3.60756E-03	3.58174E-03
17	15600.000	5.62618E-03	5.31759E-03	5.25653E-03	5.20083E-03
18	16100.000	3.17293E-03	3.06583E-03	3.04571E-03	3.02423E-03
19	17880.000	4.38573E-03	4.18356E-03	4.14466E-03	4.10890E-03
20	18120.000	4.27032E-03	4.07537E-03	4.03771E-03	4.00315E-03
21	21040.000	3.17450E-03	3.05348E-03	3.03035E-03	3.00854E-03
22	21250.000	3.11206E-03	2.99420E-03	2.97177E-03	2.95046E-03
23	22820.000	2.69770E-03	2.59886E-03	2.58020E-03	2.56239E-03
24	24800.000	2.27464E-03	2.19061E-03	2.17442E-03	2.15857E-03
25	25600.000	1.28991E-03	1.26814E-03	1.26408E-03	1.26022E-03
26	26500.000	1.99894E-03	1.93159E-03	1.91912E-03	1.90683E-03
27	28200.000	1.05666E-03	1.03348E-03	1.02953E-03	1.02551E-03
28	29700.000	1.59591E-03	1.55254E-03	1.54461E-03	1.53704E-03
29	31200.000	8.66427E-04	8.50303E-04	8.47102E-04	8.44365E-04
30	33200.000	1.27808E-03	1.24857E-03	1.24314E-03	1.23791E-03
31	36400.000	1.06311E-03	1.03944E-03	1.03510E-03	1.03098E-03
32	42200.000	7.91737E-04	7.78971E-04	7.76509E-04	7.74299E-04

TABLE A-IX (Page 18)

DOPPLER BROADENED (300°K) CAPTURE RESONANCE INTEGRALS BY RESONANCE

5. COPPER 63 (continued)

RES NO	RES ENERGY	DILUTE	L=0.01000 CM	L=0.02000 CM	L=0.03000 CM
1	577.000	2.58631E 00	1.97362E 00	1.67768E 00	1.48385E 00
2	2010.000	2.07040E-01	1.93232E-01	1.84773E-01	1.78261E-01
3	2660.000	1.77791E-01	1.56948E-01	1.44727E-01	1.35266E-01
4	4860.000	3.45061E-02	3.26731E-02	3.13644E-02	3.03371E-02
5	5390.000	4.79340E-02	4.47005E-02	4.26296E-02	4.10104E-02
6	5820.000	3.95845E-02	3.68093E-02	3.49757E-02	3.35373E-02
7	7236.000	1.03997E-02	1.02590E-02	1.01491E-02	1.00519E-02
8	7640.000	1.38381E-02	1.33477E-02	1.29583E-02	1.26395E-02
9	7940.000	2.22400E-02	2.12422E-02	2.05578E-02	2.00121E-02
10	9200.000	1.64323E-02	1.56498E-02	1.50909E-02	1.46478E-02
11	9930.000	8.53627E-03	8.31943E-03	8.16590E-03	8.03089E-03
12	10850.000	1.18794E-02	1.14062E-02	1.10641E-02	1.07874E-02
13	12540.000	5.26072E-03	5.12886E-03	5.03839E-03	4.94848E-03
14	13170.000	8.07191E-03	7.79537E-03	7.59520E-03	7.42821E-03
15	13700.000	4.47550E-03	4.37679E-03	4.30862E-03	4.24607E-03
16	14900.000	3.77053E-03	3.68902E-03	3.63335E-03	3.58174E-03
17	15600.000	5.62618E-03	5.45117E-03	5.31761E-03	5.20083E-03
18	16100.000	3.17293E-03	3.10810E-03	3.06583E-03	3.02423E-03
19	17880.000	4.38573E-03	4.26764E-03	4.18358E-03	4.10890E-03
20	18120.000	4.27032E-03	4.15618E-03	4.07535E-03	4.00315E-03
21	21040.000	3.17450E-03	3.10350E-03	3.05348E-03	3.00854E-03
22	21250.000	3.11206E-03	3.04292E-03	2.99421E-03	2.95047E-03
23	22820.000	2.69770E-03	2.63927E-03	2.59885E-03	2.56239E-03
24	24800.000	2.27464E-03	2.22480E-03	2.19061E-03	2.15857E-03
25	25600.000	1.28991E-03	1.27787E-03	1.26814E-03	1.26022E-03
26	26500.000	1.99894E-03	1.95898E-03	1.93159E-03	1.90683E-03
27	28200.000	1.05666E-03	1.04335E-03	1.03348E-03	1.02551E-03
28	29700.000	1.59591E-03	1.57057E-03	1.55254E-03	1.53704E-03
29	31200.000	8.66427E-04	8.56641E-04	8.50303E-04	8.44365E-04
30	33200.000	1.27808E-03	1.26093E-03	1.24857E-03	1.23791E-03
31	36400.000	1.06311E-03	1.04917E-03	1.03944E-03	1.03098E-03
32	42200.000	7.91737E-04	7.84251E-04	7.78971E-04	7.74299E-04

TABLE A-IX (Page 19)

DOPPLER BROADENED (300°K) CAPTURE RESONANCE INTEGRALS BY RESONANCE

5. COPPER 63 (continued)

RES NO	RES ENERGY	DILUTE	L=0.02000 CM	L=0.04000 CM	L=0.06000 CM
1	577.000	2.58631E 00	1.67768E 00	1.34503E 00	1.15730E 00
2	2010.000	2.07040E-01	1.84773E-01	1.72933E-01	1.64505E-01
3	2660.000	1.77791E-01	1.44727E-01	1.27621E-01	1.15882E-01
4	4860.000	3.45061E-02	3.13644E-02	2.94614E-02	2.80071E-02
5	5390.000	4.79340E-02	4.26298E-02	3.96632E-02	3.74790E-02
6	5820.000	3.95845E-02	3.49757E-02	3.23286E-02	3.03120E-02
7	7236.000	1.03997E-02	1.01491E-02	9.96534E-03	9.80525E-03
8	7640.000	1.38381E-02	1.29583E-02	1.23683E-02	1.19077E-02
9	7940.000	2.22400E-02	2.05578E-02	1.95482E-02	1.87809E-02
10	9200.000	1.64323E-02	1.50909E-02	1.42695E-02	1.36401E-02
11	9930.000	8.53627E-03	8.16590E-03	7.91323E-03	7.71259E-03
12	10850.000	1.18794E-02	1.10641E-02	1.05510E-02	1.01535E-02
13	12540.000	5.26072E-03	5.03839E-03	4.87075E-03	4.73934E-03
14	13170.000	8.07191E-03	7.59522E-03	7.28485E-03	7.04237E-03
15	13700.000	4.47550E-03	4.30862E-03	4.18969E-03	4.09298E-03
16	14900.000	3.77053E-03	3.63337E-03	3.53378E-03	3.45207E-03
17	15600.000	5.62618E-03	5.31759E-03	5.10123E-03	4.93326E-03
18	16100.000	3.17293E-03	3.06583E-03	2.98352E-03	2.91513E-03
19	17880.000	4.38573E-03	4.18356E-03	4.04415E-03	3.93417E-03
20	18120.000	4.27032E-03	4.07537E-03	3.94062E-03	3.83426E-03
21	21040.000	3.17450E-03	3.05348E-03	2.96892E-03	2.90106E-03
22	21250.000	3.11206E-03	2.99420E-03	2.91181E-03	2.84559E-03
23	22820.000	2.69770E-03	2.59886E-03	2.52950E-03	2.47324E-03
24	24800.000	2.27464E-03	2.19061E-03	2.12940E-03	2.07973E-03
25	25600.000	1.28991E-03	1.26814E-03	1.25302E-03	1.24003E-03
26	26500.000	1.99894E-03	1.93159E-03	1.88379E-03	1.84428E-03
27	28200.000	1.05666E-03	1.03348E-03	1.01814E-03	1.00388E-03
28	29700.000	1.59591E-03	1.55254E-03	1.52260E-03	1.49718E-03
29	31200.000	8.66427E-04	8.50303E-04	8.39105E-04	8.29427E-04
30	33200.000	1.27808E-03	1.24857E-03	1.22829E-03	1.21085E-03
31	36400.000	1.06311E-03	1.03944E-03	1.02321E-03	1.00913E-03
32	42200.000	7.91737E-04	7.78971E-04	7.70105E-04	7.62611E-04

6. GALLIUM 71

RES NO	RES ENERGY	DILUTE	L=0.05000 CM	L=0.10000 CM	L=0.15000 CM
1	95.000	1.25384E 01	8.07299E 00	6.41261E 00	5.46891E 00
2	288.000	1.00032E 01	6.32528E 00	5.34071E 00	4.78950E 00
3	377.000	3.63837E 00	2.42516E 00	2.03780E 00	1.82530E 00
4	706.000	1.05764E 00	8.02514E-01	6.76951E-01	5.94763E-01

TABLE A-IX (Page 20)

DOPPLER BROADENED (300°K) CAPTURE RESONANCE INTEGRALS BY RESONANCE

7. ARSENIC 75

RES NO	RES ENERGY	DILUTE	L=0.00500 CM	L=0.01000 CM	L=0.01500 CM
1	47.000	3.34292E 01	2.80189E 01	2.49086E 01	2.26265E 01
2	92.400	3.48900E 00	3.35038E 00	3.23723E 00	3.14929E 00
3	252.700	1.44496E 00	1.39095E 00	1.35137E 00	1.31767E 00
4	318.600	4.63048E 00	4.00872E 00	3.63445E 00	3.35152E 00
5	326.700	3.03747E 00	2.75103E 00	2.56913E 00	2.42288E 00
6	455.500	2.83343E-01	2.75675E-01	2.76334E-01	2.74548E-01
7	476.900	9.10521E-02	9.10521E-02	9.10521E-02	9.10521E-02
8	493.300	1.13238E-02	1.13238E-02	1.13238E-02	1.13238E-02
9	533.400	2.28870E 00	1.98117E 00	1.80862E 00	1.67920E 00
10	664.900	5.30224E-01	5.06158E-01	4.88755E-01	4.74086E-01
11	733.300	7.75327E-01	7.26288E-01	6.92518E-01	6.65279E-01
12	737.400	1.22774E 00	1.09749E 00	1.01865E 00	9.56693E-01
13	874.600	1.56885E-02	1.56885E-02	1.56885E-02	1.56885E-02
14	895.500	2.30457E-01	2.26203E-01	2.22838E-01	2.19918E-01
15	929.000	5.59726E-01	5.19399E-01	4.92128E-01	4.69581E-01
16	1110.000	1.45583E-01	1.43759E-01	1.42320E-01	1.41053E-01
17	1299.000	2.25954E-01	2.15128E-01	2.06893E-01	2.00365E-01
18	1353.000	1.57840E-01	1.53498E-01	1.50208E-01	1.47306E-01
19	1443.000	2.86584E-01	2.70815E-01	2.59737E-01	2.50596E-01
20	1479.300	3.85441E-02	3.85441E-02	3.82862E-02	3.81230E-02
21	1683.000	2.48556E-01	2.33663E-01	2.23207E-01	2.14861E-01
22	1739.000	8.19318E-03	8.19318E-03	8.19318E-03	8.19318E-03
23	1807.000	8.47918E-02	8.30035E-02	8.16141E-02	8.04243E-02
24	1845.600	9.65856E-03	9.65856E-03	9.64049E-03	9.65856E-03
25	1904.000	1.57224E-01	1.48768E-01	1.42655E-01	1.37747E-01
26	2021.100	8.37824E-03	8.37824E-03	8.37824E-03	8.37824E-03
27	2049.000	4.89098E-02	4.83387E-02	4.78888E-02	4.74966E-02
28	2190.000	4.58727E-03	4.58727E-03	4.58299E-03	4.58727E-03
29	2232.000	2.29140E-03	2.29140E-03	2.29140E-03	2.29140E-03
30	2256.000	6.20227E-03	6.20227E-03	6.20227E-03	6.20227E-03
31	2288.000	8.50672E-03	8.50672E-03	8.50672E-03	8.50672E-03
32	2330.000	3.79445E-03	3.79445E-03	3.79445E-03	3.79445E-03
33	2365.000	2.31766E-02	2.30483E-02	2.30384E-02	2.29795E-02
34	2395.000	5.73557E-03	5.73557E-03	5.73557E-03	5.73557E-03
35	2403.000	1.69683E-03	1.69683E-03	1.69683E-03	1.69683E-03
36	2470.000	4.73313E-03	4.73313E-03	4.73313E-03	4.73313E-03
37	2511.000	5.73228E-02	5.60951E-02	5.51614E-02	5.43612E-02
38	2577.000	4.34824E-03	4.34824E-03	4.34336E-03	4.34824E-03
39	2616.000	9.97832E-02	9.60711E-02	9.32061E-02	9.08115E-02
40	2673.000	3.07925E-03	3.07925E-03	3.07925E-03	3.07925E-03
41	2733.000	1.23848E-01	1.19072E-01	1.15211E-01	1.12102E-01
42	2821.000	5.17702E-02	5.04650E-02	4.94900E-02	4.85468E-02
43	2902.000	6.45429E-03	6.45429E-03	6.45429E-03	6.45429E-03
44	2939.000	9.52540E-03	9.52540E-03	9.52540E-03	9.52540E-03
45	3081.000	9.31458E-03	9.31458E-03	9.16936E-03	9.22772E-03
46	3144.000	6.23212E-02	6.05821E-02	5.92905E-02	5.81841E-02
47	3227.000	2.88904E-02	2.86431E-02	2.84555E-02	2.82809E-02
48	3306.000	2.64202E-03	2.64202E-03	2.64020E-03	2.64202E-03
49	3459.000	6.39237E-02	6.19685E-02	6.04041E-02	5.90833E-02
50	3505.000	5.94443E-02	5.74487E-02	5.58237E-02	5.44640E-02

TABLE A-IX (Page 21)

DOPPLER BROADENED (300°K) CAPTURE RESONANCE INTEGRALS BY RESONANCE

7. ARSENIC 75 (continued)

RES NO	RES ENERGY	DILUTE	L=0.00500 CM	L=0.01000 CM	L=0.01500 CM
51	3712.000	4.05587E-02	3.92998E-02	3.82887E-02	3.74263E-02
52	3749.000	9.93816E-03	9.93816E-03	9.90561E-03	9.88218E-03
53	3777.000	1.54223E-03	1.54223E-03	1.54223E-03	1.54223E-03
54	3822.000	1.57349E-02	1.56752E-02	1.56200E-02	1.55729E-02
55	3852.000	3.95444E-02	3.84654E-02	3.76312E-02	3.69132E-02
56	3933.000	4.67206E-02	4.53236E-02	4.42144E-02	4.32438E-02
57	3998.000	2.62534E-02	2.57798E-02	2.54466E-02	2.51200E-02
58	4096.000	4.00134E-03	4.00134E-03	4.00134E-03	4.00134E-03
59	4146.000	1.14606E-02	1.14317E-02	1.14046E-02	1.13768E-02
60	4253.000	6.98875E-03	6.98875E-03	6.95586E-03	6.96686E-03
61	4289.000	1.48924E-02	1.48191E-02	1.47625E-02	1.47082E-02
62	4358.000	1.89449E-02	1.87692E-02	1.86268E-02	1.85045E-02
63	4378.000	1.92250E-03	1.92250E-03	1.92250E-03	1.92250E-03
64	4442.000	4.92960E-03	4.92960E-03	4.92960E-03	4.92960E-03
65	4470.000	3.18940E-03	3.18940E-03	3.18577E-03	3.18940E-03
66	4488.000	1.16142E-03	1.16142E-03	1.16142E-03	1.16142E-03
67	4514.000	1.96779E-02	1.94175E-02	1.92142E-02	1.90299E-02
68	4576.000	1.53510E-02	1.52479E-02	1.51736E-02	1.51021E-02
69	4669.000	2.00914E-02	1.97249E-02	1.94816E-02	1.92448E-02
70	4761.000	1.90857E-02	1.87581E-02	1.85363E-02	1.83244E-02
71	4875.000	3.84656E-03	3.84335E-03	3.84656E-03	3.84656E-03
72	4905.000	1.80861E-02	1.77765E-02	1.75689E-02	1.73727E-02
73	5006.000	1.74104E-02	1.71175E-02	1.69168E-02	1.67317E-02
74	5043.000	1.08205E-03	1.08172E-03	1.08205E-03	1.08205E-03
75	5090.000	1.54035E-02	1.52312E-02	1.50930E-02	1.49695E-02
76	5183.000	2.37226E-03	2.37086E-03	2.37226E-03	2.37226E-03
77	5303.000	2.66173E-03	2.66173E-03	2.66173E-03	2.66173E-03
78	5324.000	3.01194E-03	3.01194E-03	3.01194E-03	3.01194E-03
79	5387.000	1.40486E-02	1.38843E-02	1.37549E-02	1.36379E-02
80	5446.000	1.12785E-02	1.12141E-02	1.11616E-02	1.11151E-02
81	5466.000	2.17117E-03	2.16993E-03	2.17117E-03	2.17117E-03
82	5573.000	1.45227E-02	1.42814E-02	1.41099E-02	1.39641E-02
83	5610.000	1.38481E-02	1.36358E-02	1.34922E-02	1.33658E-02
84	5709.000	1.37656E-02	1.35335E-02	1.33865E-02	1.32515E-02
85	5755.000	1.28877E-02	1.27141E-02	1.25858E-02	1.24751E-02
86	5775.000	2.01289E-03	2.01289E-03	2.01289E-03	2.01289E-03
87	5863.000	1.22410E-02	1.20899E-02	1.19735E-02	1.18729E-02
88	5998.000	1.24999E-02	1.22975E-02	1.21662E-02	1.20486E-02
89	6070.000	3.22802E-03	3.22802E-03	3.22802E-03	3.22802E-03
90	6178.000	1.13325E-02	1.11752E-02	1.10712E-02	1.09771E-02
91	6265.000	2.04293E-03	2.04174E-03	2.04293E-03	2.04293E-03
92	6336.000	7.35403E-03	7.32809E-03	7.30935E-03	7.28940E-03
93	6423.000	1.06983E-02	1.05446E-02	1.04411E-02	1.03518E-02
94	6450.000	1.06397E-02	1.04860E-02	1.03825E-02	1.02928E-02
95	6506.000	7.45763E-04	7.45763E-04	7.45763E-04	7.45351E-04

TABLE A-IX (Page 22)

DOPPLER BROADENED (300°K) CAPTURE RESONANCE INTEGRALS BY RESONANCE

7. ARSENIC 75 (continued)

RES NO	RES ENERGY	DILUTE	L=0.00500 CM	L=0.01000 CM	L=0.01500 CM
96	6549.000	9.73158E-03	9.62801E-03	9.54740E-03	9.47579E-03
97	6593.000	1.89285E-03	1.89285E-03	1.89119E-03	1.89285E-03
98	6765.000	2.50489E-03	2.50489E-03	2.50489E-03	2.50489E-03
99	6904.000	4.74762E-03	4.73303E-03	4.73238E-03	4.72518E-03
100	6959.000	9.15460E-03	9.02883E-03	8.94509E-03	8.87222E-03
101	7071.000	6.01714E-03	5.99675E-03	5.98247E-03	5.96861E-03
102	7121.000	3.90484E-03	3.90484E-03	3.89121E-03	3.89036E-03
103	7254.000	8.93798E-04	8.93798E-04	8.93798E-04	8.93798E-04
104	7297.000	6.17872E-04	6.17872E-04	6.17608E-04	6.17872E-04
105	7370.000	7.82245E-03	7.73947E-03	7.67974E-03	7.62574E-03
106	7443.000	7.37769E-03	7.31721E-03	7.26841E-03	7.22605E-03
107	7479.000	5.88167E-04	5.88167E-04	5.87920E-04	5.88167E-04
108	7596.000	5.84908E-03	5.82867E-03	5.80840E-03	5.79015E-03
109	7627.000	7.03612E-03	6.97911E-03	6.93365E-03	6.89422E-03
110	7680.000	5.48559E-03	5.47043E-03	5.45209E-03	5.43817E-03
111	7706.000	3.40941E-03	3.39336E-03	3.40272E-03	3.39677E-03
112	7778.000	6.52702E-03	6.48546E-03	6.44854E-03	6.41745E-03
113	7875.000	2.65389E-03	2.65389E-03	2.64331E-03	2.64771E-03
114	7920.000	5.48986E-03	5.46484E-03	5.45110E-03	5.43453E-03
115	8026.000	3.90230E-03	3.90230E-03	3.88883E-03	3.88477E-03
116	8240.000	6.38790E-03	6.32042E-03	6.27222E-03	6.23014E-03
117	8315.000	6.17456E-03	6.11296E-03	6.07201E-03	6.03392E-03
118	8380.000	6.33581E-03	6.25808E-03	6.20762E-03	6.16616E-03
119	8449.000	4.97861E-04	4.97861E-04	4.97861E-04	4.97861E-04
120	8508.000	5.79374E-03	5.74758E-03	5.70880E-03	5.67449E-03
121	8556.000	3.13448E-03	3.12244E-03	3.12575E-03	3.12178E-03
122	8590.000	4.93112E-03	4.91282E-03	4.89281E-03	4.87819E-03
123	8650.000	1.53212E-03	1.53212E-03	1.53212E-03	1.50826E-03
124	8766.000	3.34031E-03	3.33088E-03	3.32820E-03	3.32602E-03
125	8823.000	1.42743E-03	1.42665E-03	1.42743E-03	1.42743E-03
126	8880.000	5.05434E-03	5.02101E-03	4.99935E-03	4.97819E-03
127	9030.000	5.55082E-03	5.48324E-03	5.44164E-03	5.40205E-03
128	9135.000	1.11910E-03	1.11857E-03	1.11836E-03	1.11910E-03
129	9173.000	1.39320E-03	1.39320E-03	1.39320E-03	1.39320E-03
130	9215.000	4.60981E-03	4.58520E-03	4.56743E-03	4.54823E-03
131	9375.000	4.07371E-03	4.06071E-03	4.04684E-03	4.03563E-03
132	9430.000	2.40728E-03	2.40728E-03	2.40225E-03	2.39988E-03
133	9520.000	4.84394E-03	4.79009E-03	4.76257E-03	4.73381E-03
134	9557.000	4.61578E-03	4.58509E-03	4.55422E-03	4.52975E-03
135	9647.000	3.59311E-03	3.58544E-03	3.57445E-03	3.56753E-03
136	9686.000	4.27322E-03	4.24641E-03	4.23075E-03	4.21354E-03

TABLE A-IX (Page 23)

DOPPLER BROADENED (300°K) CAPTURE RESONANCE INTEGRALS BY RESONANCE

7. ARSENIC 75 (continued)

RES NO	RES ENERGY	DILUTE	L=0.01000 CM	L=0.02000 CM	L=0.03000 CM
1	47.000	3.34292E 01	2.49086E 01	2.08521E 01	1.82214E 01
2	92.400	3.48900E 00	3.23499E 00	3.06565E 00	2.92229E 00
3	252.700	1.44496E 00	1.35137E 00	1.28643E 00	1.23211E 00
4	318.600	4.63048E 00	3.63445E 00	3.12777E 00	2.78022E 00
5	326.700	3.03747E 00	2.56913E 00	2.30011E 00	2.10485E 00
6	455.500	2.83343E-01	2.76334E-01	2.73895E-01	2.69531E-01
7	476.900	9.10521E-02	9.10521E-02	9.10521E-02	8.93986E-02
8	493.300	1.13238E-02	1.13238E-02	1.13238E-02	1.13238E-02
9	533.400	2.28870E 00	1.80862E 00	1.57715E 00	1.42461E 00
10	664.900	5.30224E-01	4.88759E-01	4.60719E-01	4.37375E-01
11	733.300	7.75327E-01	6.92518E-01	6.41687E-01	6.01464E-01
12	737.400	1.22774E 00	1.01865E 00	9.05418E-01	8.24945E-01
13	874.600	1.56885E-02	1.56885E-02	1.56885E-02	1.54969E-02
14	895.500	2.30457E-01	2.22838E-01	2.17203E-01	2.12249E-01
15	929.000	5.59726E-01	4.92128E-01	4.50111E-01	4.17769E-01
16	1110.000	1.45583E-01	1.42320E-01	1.39851E-01	1.37650E-01
17	1299.000	2.25954E-01	2.06893E-01	1.94736E-01	1.85193E-01
18	1353.000	1.57840E-01	1.50207E-01	1.44717E-01	1.40094E-01
19	1443.000	2.86584E-01	2.59737E-01	2.42531E-01	2.28657E-01
20	1479.300	3.85441E-02	3.82862E-02	3.80589E-02	3.78653E-02
21	1683.000	2.48556E-01	2.23207E-01	2.07721E-01	1.95563E-01
22	1739.000	8.19318E-03	8.19318E-03	8.19318E-03	8.07434E-03
23	1807.000	8.47918E-02	8.16141E-02	7.92887E-02	7.73257E-02
24	1845.600	9.65856E-03	9.64049E-03	9.65856E-03	9.65856E-03
25	1904.000	1.57224E-01	1.42655E-01	1.33517E-01	1.26297E-01
26	2021.100	8.37824E-03	8.37824E-03	8.37824E-03	8.37824E-03
27	2049.000	4.89098E-02	4.78888E-02	4.71367E-02	4.64522E-02
28	2190.000	4.58727E-03	4.58299E-03	4.58727E-03	4.58727E-03
29	2232.000	2.29140E-03	2.29140E-03	2.29140E-03	2.29140E-03
30	2256.000	6.20227E-03	6.20227E-03	6.20227E-03	6.20227E-03
31	2288.000	8.50672E-03	8.50672E-03	8.50672E-03	8.50672E-03
32	2330.000	3.79445E-03	3.79445E-03	3.79445E-03	3.79445E-03
33	2365.000	2.31766E-02	2.30384E-02	2.29113E-02	2.28188E-02
34	2395.000	5.73557E-03	5.73557E-03	5.73557E-03	5.73557E-03
35	2403.000	1.69683E-03	1.69683E-03	1.69683E-03	1.69683E-03
36	2470.000	4.73313E-03	4.73313E-03	4.73313E-03	4.73313E-03
37	2511.000	5.73228E-02	5.51614E-02	5.36296E-02	5.22785E-02
38	2577.000	4.34824E-03	4.34336E-03	4.34824E-03	4.34824E-03
39	2616.000	9.97832E-02	9.32061E-02	8.87183E-02	8.50902E-02
40	2673.000	3.07925E-03	3.07925E-03	3.07925E-03	3.07925E-03
41	2733.000	1.23848E-01	1.15212E-01	1.09407E-01	1.04795E-01
42	2821.000	5.17702E-02	4.94900E-02	4.77350E-02	4.63264E-02
43	2902.000	6.45429E-03	6.45429E-03	6.45429E-03	6.42451E-03
44	2939.000	9.52540E-03	9.52540E-03	9.52540E-03	9.46856E-03
45	3081.000	9.31458E-03	9.16936E-03	9.31458E-03	9.23954E-03
46	3144.000	6.23212E-02	5.92905E-02	5.71509E-02	5.53535E-02
47	3227.000	2.88904E-02	2.84555E-02	2.81180E-02	2.78166E-02
48	3306.000	2.64202E-03	2.64020E-03	2.64202E-03	2.64202E-03
49	3459.000	6.39237E-02	6.04041E-02	5.79137E-02	5.58933E-02
50	3505.000	5.94443E-02	5.58237E-02	5.32962E-02	5.12888E-02

TABLE A-IX (Page 24)

DOPPLER BROADENED (300°K) CAPTURE RESONANCE INTEGRALS BY RESONANCE

7. ARSENIC 75 (continued)

RES NO	RES ENERGY	DILUTE	L=0.01000 CM	L=0.02000 CM	L=0.03000 CM
51	3712.000	4.05587E-02	3.82887E-02	3.66739E-02	3.53779E-02
52	3749.000	9.93816E-03	9.90561E-03	9.87228E-03	9.84562E-03
53	3777.000	1.54223E-03	1.54223E-03	1.54223E-03	1.54223E-03
54	3822.000	1.57349E-02	1.56200E-02	1.55291E-02	1.54421E-02
55	3852.000	3.95444E-02	3.76312E-02	3.62625E-02	3.51257E-02
56	3933.000	4.67206E-02	4.42144E-02	4.24006E-02	4.09509E-02
57	3998.000	2.62534E-02	2.54466E-02	2.48135E-02	2.42809E-02
58	4096.000	4.00134E-03	4.00134E-03	4.00134E-03	4.00134E-03
59	4146.000	1.14606E-02	1.14046E-02	1.13542E-02	1.13116E-02
60	4253.000	6.98875E-03	6.95586E-03	6.95066E-03	6.94067E-03
61	4289.000	1.48924E-02	1.47625E-02	1.46595E-02	1.45687E-02
62	4358.000	1.89449E-02	1.86268E-02	1.83824E-02	1.81665E-02
63	4378.000	1.92250E-03	1.92250E-03	1.92250E-03	1.92250E-03
64	4442.000	4.92960E-03	4.92960E-03	4.89307E-03	4.90689E-03
65	4470.000	3.18940E-03	3.18577E-03	3.18940E-03	3.18940E-03
66	4488.000	1.16142E-03	1.16142E-03	1.16142E-03	1.16142E-03
67	4514.000	1.96779E-02	1.92142E-02	1.88615E-02	1.85659E-02
68	4576.000	1.53510E-02	1.51736E-02	1.50348E-02	1.49118E-02
69	4669.000	2.00914E-02	1.94817E-02	1.89986E-02	1.85776E-02
70	4761.000	1.90857E-02	1.85363E-02	1.81036E-02	1.77246E-02
71	4875.000	3.84656E-03	3.84656E-03	3.84656E-03	3.84656E-03
72	4905.000	1.80861E-02	1.75689E-02	1.71639E-02	1.68052E-02
73	5006.000	1.74104E-02	1.69182E-02	1.65319E-02	1.61885E-02
74	5043.000	1.08205E-03	1.08205E-03	1.08205E-03	1.08205E-03
75	5090.000	1.54035E-02	1.50931E-02	1.48526E-02	1.46445E-02
76	5183.000	2.37226E-03	2.37226E-03	2.36806E-03	2.36612E-03
77	5303.000	2.66173E-03	2.66173E-03	2.66173E-03	2.66173E-03
78	5324.000	3.01194E-03	3.01194E-03	3.01194E-03	3.01194E-03
79	5387.000	1.40486E-02	1.37549E-02	1.35312E-02	1.33389E-02
80	5446.000	1.12785E-02	1.11616E-02	1.10695E-02	1.09881E-02
81	5466.000	2.17117E-03	2.17117E-03	2.17117E-03	2.16580E-03
82	5573.000	1.45227E-02	1.41098E-02	1.38077E-02	1.35222E-02
83	5610.000	1.38481E-02	1.34922E-02	1.32263E-02	1.29719E-02
84	5709.000	1.37656E-02	1.33865E-02	1.31063E-02	1.28381E-02
85	5755.000	1.28877E-02	1.25858E-02	1.23619E-02	1.21514E-02
86	5775.000	2.01289E-03	2.01289E-03	2.01289E-03	2.00809E-03
87	5863.000	1.22410E-02	1.19735E-02	1.17747E-02	1.15929E-02
88	5998.000	1.24999E-02	1.21662E-02	1.19250E-02	1.16885E-02
89	6070.000	3.22802E-03	3.22802E-03	3.22802E-03	3.21285E-03
90	6178.000	1.13325E-02	1.10712E-02	1.08810E-02	1.06942E-02
91	6265.000	2.04293E-03	2.04293E-03	2.04293E-03	1.95426E-03
92	6336.000	7.35403E-03	7.30935E-03	7.27162E-03	7.23839E-03
93	6423.000	1.06983E-02	1.04411E-02	1.02593E-02	1.00721E-02
94	6450.000	1.06397E-02	1.03825E-02	1.02007E-02	1.00134E-02
95	6506.000	7.45763E-04	7.45763E-04	7.45763E-04	7.45763E-04

TABLE A-IX (Page 25)

DOPPLER BROADENED (300°K) CAPTURE RESONANCE INTEGRALS BY RESONANCE

7. ARSENIC 75 (continued)

RES NO	RES ENERGY	DILUTE	L=0.01000 CM	L=0.02000 CM	L=0.03000 CM
96	6549.000	9.73158E-03	9.54740E-03	9.40936E-03	9.28482E-03
97	6593.000	1.89285E-03	1.89119E-03	1.89285E-03	1.89285E-03
98	6765.000	2.50489E-03	2.50489E-03	2.50489E-03	2.49560E-03
99	6904.000	4.74762E-03	4.73238E-03	4.71958E-03	4.70825E-03
100	6959.000	9.15460E-03	8.94509E-03	8.80097E-03	8.64893E-03
101	7071.000	6.01714E-03	5.98247E-03	5.95548E-03	5.93125E-03
102	7121.000	3.90484E-03	3.89121E-03	3.88699E-03	3.87977E-03
103	7254.000	8.93798E-04	8.93798E-04	8.93798E-04	8.93798E-04
104	7297.000	6.17872E-04	6.17608E-04	6.17872E-04	6.17872E-04
105	7370.000	7.82245E-03	7.67974E-03	7.57559E-03	7.47736E-03
106	7443.000	7.37769E-03	7.26841E-03	7.18583E-03	7.10856E-03
107	7479.000	5.88167E-04	5.87920E-04	5.88167E-04	5.88167E-04
108	7596.000	5.84908E-03	5.80840E-03	5.77468E-03	5.74432E-03
109	7627.000	7.03612E-03	6.93365E-03	6.85679E-03	6.78474E-03
110	7680.000	5.48559E-03	5.45209E-03	5.42526E-03	5.40063E-03
111	7706.000	3.40941E-03	3.40272E-03	3.39381E-03	3.38910E-03
112	7778.000	6.52702E-03	6.44854E-03	6.38882E-03	6.33325E-03
113	7875.000	2.65389E-03	2.64331E-03	2.64603E-03	2.64194E-03
114	7920.000	5.48986E-03	5.45110E-03	5.41975E-03	5.39064E-03
115	8026.000	3.90230E-03	3.88883E-03	3.87935E-03	3.87028E-03
116	8240.000	6.38790E-03	6.27222E-03	6.19174E-03	6.11308E-03
117	8315.000	6.17456E-03	6.07201E-03	5.99762E-03	5.92842E-03
118	8380.000	6.33581E-03	6.20762E-03	6.12536E-03	6.03906E-03
119	8449.000	4.97861E-04	4.97861E-04	4.97861E-04	4.97861E-04
120	8508.000	5.79374E-03	5.70880E-03	5.64345E-03	5.58546E-03
121	8556.000	3.13448E-03	3.12575E-03	3.11988E-03	3.11482E-03
122	8590.000	4.93112E-03	4.89281E-03	4.86333E-03	4.83666E-03
123	8650.000	1.53212E-03	1.53212E-03	1.53212E-03	1.52371E-03
124	8766.000	3.34031E-03	3.32820E-03	3.32164E-03	3.31516E-03
125	8823.000	1.42743E-03	1.42743E-03	1.42743E-03	1.42743E-03
126	8880.000	5.05434E-03	4.99935E-03	4.95808E-03	4.92037E-03
127	9030.000	5.55082E-03	5.44164E-03	5.36681E-03	5.29571E-03
128	9135.000	1.11910E-03	1.11836E-03	1.11910E-03	1.11910E-03
129	9173.000	1.39320E-03	1.39320E-03	1.39320E-03	1.38595E-03
130	9215.000	4.60981E-03	4.56741E-03	4.53250E-03	4.50223E-03
131	9375.000	4.07371E-03	4.04684E-03	4.02601E-03	4.00611E-03
132	9430.000	2.40728E-03	2.40225E-03	2.39933E-03	2.39501E-03
133	9520.000	4.84394E-03	4.76257E-03	4.70681E-03	4.65399E-03
134	9557.000	4.61578E-03	4.55422E-03	4.50712E-03	4.46493E-03
135	9647.000	3.59311E-03	3.57445E-03	3.56065E-03	3.54734E-03
136	9686.000	4.27322E-03	4.23075E-03	4.19765E-03	4.16786E-03

TABLE A-IX (Page 26)

DOPPLER BROADENED (300°K) CAPTURE RESONANCE INTEGRALS BY RESONANCE

8. SELENIUM 80

RES NO	RES ENERGY	DILUTE	L=0.10000 CM	L=0.20000 CM	L=0.30000 CM
1	1980.000	2.60533E-01	2.22163E-01	2.04579E-01	1.92532E-01
2	4100.000	6.06982E-02	5.19052E-02	4.75467E-02	4.45799E-02
3	4800.000	4.44251E-02	4.00062E-02	3.76667E-02	3.60102E-02
4	11850.000	7.24403E-03	6.60662E-03	6.22142E-03	5.92802E-03
5	18300.000	3.05886E-03	2.89860E-03	2.79450E-03	2.71323E-03
6	20900.000	2.34219E-03	2.21844E-03	2.13578E-03	2.07115E-03
7	23900.000	1.78660E-03	1.69701E-03	1.63421E-03	1.58541E-03
8	29600.000	1.16381E-03	1.11512E-03	1.07896E-03	1.05059E-03
9	39900.000	6.44056E-04	6.26208E-04	6.13875E-04	6.03479E-04

9. BROMINE 81

RES NO	RES ENERGY	DILUTE	L=0.10000 CM	L=0.20000 CM	L=0.30000 CM
1	101.000	2.49427E 01	1.32124E 01	1.00539E 01	8.45099E 00
2	135.500	1.39122E 01	8.14644E 00	6.43622E 00	5.52944E 00
3	205.000	7.55652E-01	7.14887E-01	6.86733E-01	6.62468E-01

10. MOLYBDENUM 98

RES NO	RES ENERGY	DILUTE	L=0.00500 CM	L=0.01000 CM	L=0.01500 CM
1	12.000	1.99569E 00	1.99569E 00	1.99569E 00	1.97835E 00
2	429.400	1.15491E 00	1.12358E 00	1.09997E 00	1.07912E 00
3	467.200	2.92678E 00	2.61677E 00	2.42414E 00	2.27173E 00
4	612.000	3.26616E-01	3.21634E-01	3.20913E-01	3.18341E-01
5	817.000	3.51583E-01	3.46695E-01	3.42981E-01	3.39503E-01
6	1105.000	4.18845E-01	4.06476E-01	3.97438E-01	3.89415E-01
7	1519.000	3.11481E-01	2.96829E-01	2.86320E-01	2.77550E-01
8	2550.000	1.10912E-01	1.07730E-01	1.05368E-01	1.03348E-01
9	3300.000	7.18327E-02	6.97395E-02	6.81040E-02	6.66479E-02
10	9000.000	1.01000E-02	9.97256E-03	9.88533E-03	9.80516E-03

TABLE A-IX (Page 27)

DOPPLER BROADENED(300°K) CAPTURE RESONANCE INTEGRALS BY RESONANCE

10. MOLYBDENUM 98 (continued)

RES NO	RES ENERGY	DILUTE	L=0.02000 CM	L=0.02500 CM	L=0.03000 CM
1	12.000	1.99569E 00	1.95138E 00	1.96361E 00	1.95246E 00
2	429.400	1.15491E 00	1.05985E 00	1.04201E 00	1.02519E 00
3	467.200	2.92678E 00	2.14008E 00	2.03203E 00	1.93891E 00
4	612.000	3.26616E-01	3.16497E-01	3.14348E-01	3.12487E-01
5	817.000	3.51583E-01	3.36333E-01	3.33389E-01	3.30579E-01
6	1105.000	4.18845E-01	3.81998E-01	3.75179E-01	3.68781E-01
7	1519.000	3.11481E-01	2.69526E-01	2.62533E-01	2.56109E-01
8	2550.000	1.10912E-01	1.01410E-01	9.97147E-02	9.81412E-02
9	3300.000	7.18327E-02	6.52760E-02	6.41277E-02	6.30734E-02
10	9000.000	1.01000E-02	9.69384E-03	9.61683E-03	9.54217E-03

RES NO	RES ENERGY	DILUTE	L=0.04000 CM	L=0.08000 CM	L=0.12000 CM
1	12.000	1.99569E 00	1.94633E 00	1.91045E 00	1.87708E 00
2	429.400	1.15491E 00	9.94606E-01	8.93197E-01	8.15745E-01
3	467.200	2.92678E 00	1.79781E 00	1.42348E 00	1.22145E 00
4	612.000	3.26616E-01	3.08752E-01	2.96115E-01	2.85135E-01
5	817.000	3.51583E-01	3.25260E-01	3.06766E-01	2.91234E-01
6	1105.000	4.18845E-01	3.57206E-01	3.19541E-01	2.91302E-01
7	1519.000	3.11481E-01	2.45313E-01	2.12137E-01	1.89853E-01
8	2550.000	1.10912E-01	9.53560E-02	8.62159E-02	7.94658E-02
9	3300.000	7.18327E-02	6.13787E-02	5.56059E-02	5.13705E-02
10	9000.000	1.01000E-02	9.47122E-03	9.07323E-03	8.76467E-03

11. MOLYBDENUM 100

RES NO	RES ENERGY	DILUTE	L=0.04000 CM	L=0.08000 CM	L=0.12000 CM
1	97.700	2.40267E-01	2.40267E-01	2.37237E-01	2.36609E-01
2	363.300	5.18594E 00	3.69447E 00	3.09057E 00	2.72972E 00
3	1067.000	4.88729E-01	4.45457E-01	4.16850E-01	3.93683E-01
4	1255.000	3.18974E-01	2.99347E-01	2.85753E-01	2.74226E-01
5	1668.000	2.51485E-01	2.27260E-01	2.12036E-01	2.00010E-01
6	1936.000	2.06763E-01	1.83969E-01	1.70694E-01	1.60493E-01

TABLE A-IX (Page 28)

DOPPLER BROADENED (300°K) CAPTURE RESONANCE INTEGRALS BY RESONANCE

12. RHODIUM 103

RES NO	RES ENERGY	DILUTE	L=0.00500 CM	L=0.01000 CM	L=0.01500 CM
1	1.257	1.00061E 03	6.10368E 02	4.78781E 02	4.05088E 02
2	34.400	8.32405E-02	8.32405E-02	8.32405E-02	8.32405E-02
3	44.450	1.19500E-02	1.19471E-02	1.19500E-02	1.19500E-02
4	46.700	1.38535E 00	1.38535E 00	1.30663E 00	1.27570E 00
5	51.800	3.06096E-03	3.06096E-03	3.06096E-03	3.06096E-03
6	68.300	2.58019E-01	2.58019E-01	2.52965E-01	2.50808E-01
7	83.450	8.84260E-03	8.83973E-03	8.84260E-03	8.84260E-03
8	95.600	7.32768E-01	6.56847E-01	7.32768E-01	6.86929E-01
9	98.700	4.62420E-02	4.62420E-02	4.62420E-02	4.62420E-02
10	108.770	7.97924E-03	7.97924E-03	7.97924E-03	7.97924E-03
11	110.700	8.03816E-03	8.03392E-03	8.03816E-03	8.03816E-03
12	113.900	5.67181E-02	5.67181E-02	5.67181E-02	5.59645E-02
13	125.500	1.30978E 00	1.23524E 00	1.21133E 00	1.15015E 00
14	154.200	3.68593E 00	3.01256E 00	2.64065E 00	2.37434E 00
15	179.000	2.93063E-02	2.93063E-02	2.93063E-02	2.93063E-02
16	187.000	2.72635E 00	2.37734E 00	2.14871E 00	1.96954E 00
17	199.680	1.07859E-02	1.07859E-02	1.07859E-02	1.07859E-02
18	205.000	2.90920E-02	2.90920E-02	2.90920E-02	2.90920E-02
19	251.300	1.48690E-02	1.48690E-02	1.48690E-02	1.48690E-02
20	253.800	1.21935E 00	1.12833E 00	1.06452E 00	1.00944E 00
21	263.100	1.39334E-01	1.39334E-01	1.36380E-01	1.35269E-01
22	264.200	4.89372E-02	4.89372E-02	4.80288E-02	4.81164E-02
23	272.200	2.71688E 00	2.23331E 00	1.94700E 00	1.73807E 00
24	289.800	9.72779E-01	9.06414E-01	8.59415E-01	8.17994E-01
25	312.500	1.14834E-02	1.14834E-02	1.12369E-02	1.13274E-02
26	316.200	3.48380E-03	3.48380E-03	3.48380E-03	3.48380E-03
27	319.500	2.50813E 00	2.01652E 00	1.73909E 00	1.54209E 00
28	321.500	6.47068E-02	6.47068E-02	6.31259E-02	6.36652E-02
29	327.700	4.45136E-02	4.45136E-02	4.37712E-02	4.40523E-02
30	353.800	5.87833E-03	5.87833E-03	5.87833E-03	5.87833E-03
31	362.700	1.84456E-02	1.84456E-02	1.84456E-02	1.82644E-02
32	366.100	7.46586E-02	7.46586E-02	7.35844E-02	7.46586E-02
33	373.900	2.07652E-02	2.07652E-02	2.07652E-02	2.05829E-02
34	376.300	5.41185E-03	5.41185E-03	5.41185E-03	5.41185E-03
35	388.500	8.90345E-03	8.90345E-03	8.90345E-03	8.90345E-03
36	406.000	4.25605E-01	4.08586E-01	3.96088E-01	3.84986E-01
37	427.600	4.69144E-03	4.69144E-03	4.69144E-03	4.69144E-03
38	435.000	1.15086E 00	1.01008E 00	9.17895E-01	8.44812E-01
39	444.000	7.83951E-03	7.35637E-03	7.83951E-03	7.83951E-03
40	447.100	6.11606E-03	6.11606E-03	6.11606E-03	6.04195E-03
41	450.000	1.03692E-01	1.02515E-01	1.01334E-01	1.00410E-01
42	463.000	2.76659E-02	2.76659E-02	2.76659E-02	2.76659E-02
43	473.000	3.09036E-02	3.09036E-02	3.09036E-02	3.04837E-02
44	477.600	1.06380E-02	1.06380E-02	1.06380E-02	1.06380E-02
45	486.000	3.22811E-02	3.22811E-02	3.22811E-02	3.22811E-02

TABLE A-IX (Page 29)

DOPPLER BROADENED (300°K) CAPTURE RESONANCE INTEGRALS BY RESONANCE

12. RHODIUM 103 (continued)

RES NO	RES ENERGY	DILUTE	L=0.00500 CM	L=0.01000 CM	L=0.01500 CM
46	489.000	5.11286E-03	5.11286E-03	5.11286E-03	5.11286E-03
47	492.000	6.59417E-02	6.59417E-02	6.49440E-02	6.41525E-02
48	504.000	1.52612E-02	1.52612E-02	1.52612E-02	1.52612E-02
49	517.000	3.05719E-03	3.05719E-03	3.05719E-03	3.05719E-03
50	555.000	5.19349E-01	4.87908E-01	4.65203E-01	4.45488E-01
51	581.000	4.65961E-02	4.65961E-02	4.65961E-02	4.58859E-02
52	602.200	6.14144E-03	6.14144E-03	6.14144E-03	6.14144E-03
53	605.000	3.97572E-02	3.97572E-02	3.97572E-02	3.97572E-02
54	607.300	3.15040E-03	3.15040E-03	3.15040E-03	3.15040E-03
55	620.000	8.03369E-02	7.93381E-02	7.85667E-02	7.78916E-02
56	646.000	3.45270E-01	3.28748E-01	3.16473E-01	3.05767E-01
57	663.000	6.95240E-02	6.87491E-02	6.81285E-02	6.75864E-02
58	676.000	3.11008E-02	3.11008E-02	2.96562E-02	3.11008E-02
59	683.000	3.98146E-02	3.90357E-02	3.94237E-02	3.90929E-02
60	692.000	3.47689E-01	3.29546E-01	3.16123E-01	3.04504E-01
61	701.000	6.13855E-01	5.41084E-01	4.93257E-01	4.56003E-01
62	726.800	1.05773E-02	1.05773E-02	1.05773E-02	1.05773E-02
63	741.200	3.60048E-02	3.60048E-02	3.57041E-02	3.53729E-02
64	746.000	2.16243E-02	2.16243E-02	2.14799E-02	2.14273E-02
65	757.000	9.68349E-03	9.68349E-03	9.68349E-03	9.68349E-03
66	782.000	1.32183E-01	1.28142E-01	1.25133E-01	1.22457E-01
67	788.500	9.53901E-03	9.53901E-03	9.53901E-03	9.45237E-03
68	795.000	3.85260E-02	3.82839E-02	3.79950E-02	3.78436E-02

13. PALLADIUM 108

RES NO	RES ENERGY	DILUTE	L=0.02500 CM	L=0.05000 CM	L=0.07500 CM
1	2.960	2.36229E 00	2.31404E 00	2.30405E 00	2.28660E 00
2	33.240	1.75987E 02	5.71184E 01	4.16708E 01	3.45205E 01
3	91.600	2.93677E 01	1.28353E 01	9.53788E 00	7.97789E 00

TABLE A-IX (Page 30)

DOPPLER BROADENED (300°C) CAPTURE RESONANCE INTEGRALS BY RESONANCE

14. CADMIUM 114

RES NO	RES ENERGY	DILUTE	L=0.04000 CM	L=0.08000 CM	L=0.12000 CM
1	120.200	9.67036E 00	6.44818E 00	5.09016E 00	4.30023E 00
2	226.000	1.43016E-01	1.40799E-01	1.39282E-01	1.37805E-01
3	394.100	3.31253E 00	1.96015E 00	1.55075E 00	1.33386E 00
4	673.000	8.08708E-01	6.60101E-01	5.73903E-01	5.11943E-01
5	756.000	5.20340E-01	4.57068E-01	4.15329E-01	3.82259E-01
6	1107.000	4.56996E-01	3.40988E-01	2.88365E-01	2.54894E-01

RES NO	RES ENERGY	DILUTE	L=0.16000 CM	L=0.20000 CM	L=0.24000 CM
1	120.200	9.67036E 00	3.77665E 00	3.40080E 00	3.11559E 00
2	226.000	1.43016E-01	1.36512E-01	1.35296E-01	1.34133E-01
3	394.100	3.31253E 00	1.19676E 00	1.10027E 00	1.02796E 00
4	673.000	8.08708E-01	4.64967E-01	4.28190E-01	3.98636E-01
5	756.000	5.20340E-01	3.55208E-01	3.32685E-01	3.13650E-01
6	1107.000	4.56996E-01	2.31478E-01	2.13934E-01	2.00505E-01

RES NO	RES ENERGY	DILUTE	L=0.06000 CM	L=0.12000 CM	L=0.18000 CM
1	120.200	9.67036E 00	5.66414E 00	4.30023E 00	3.57500E 00
2	226.000	1.43016E-01	1.39892E-01	1.37805E-01	1.35889E-01
3	394.100	3.31253E 00	1.71785E 00	1.33386E 00	1.14484E 00
4	673.000	8.08708E-01	6.13120E-01	5.11943E-01	4.45542E-01
5	756.000	5.20340E-01	4.34666E-01	3.82259E-01	3.43435E-01
6	1107.000	4.56996E-01	3.11259E-01	2.54894E-01	2.22126E-01

RES NO	RES ENERGY	DILUTE	L=0.24000 CM	L=0.30000 CM	L=0.36000 CM
1	120.200	9.67036E 00	3.11559E 00	2.79496E 00	2.55590E 00
2	226.000	1.43016E-01	1.34133E-01	1.32496E-01	1.30992E-01
3	394.100	3.31253E 00	1.02796E 00	9.46783E-01	8.86380E-01
4	673.000	8.08708E-01	3.98636E-01	3.63630E-01	3.36308E-01
5	756.000	5.20340E-01	3.13650E-01	2.90107E-01	2.70944E-01
6	1107.000	4.56996E-01	2.00505E-01	1.84882E-01	1.73007E-01

RES NO	RES ENERGY	DILUTE	L=0.10000 CM	L=0.20000 CM	L=0.30000 CM
1	120.200	9.67036E 00	4.64997E 00	3.40080E 00	2.79496E 00
2	226.000	1.43016E-01	1.38493E-01	1.35296E-01	1.32496E-01
3	394.100	3.31253E 00	1.42812E 00	1.10027E 00	9.46783E-01
4	673.000	8.08708E-01	5.40658E-01	4.28190E-01	3.63630E-01
5	756.000	5.20340E-01	3.97973E-01	3.32685E-01	2.90107E-01
6	1107.000	4.56996E-01	2.69994E-01	2.13934E-01	1.84882E-01

RES NO	RES ENERGY	DILUTE	L=0.40000 CM	L=0.50000 CM	L=0.60000 CM
1	120.200	9.67036E 00	2.42692E 00	2.17519E 00	1.98981E 00
2	226.000	1.43016E-01	1.30021E-01	1.27750E-01	1.25624E-01
3	394.100	3.31253E 00	8.53795E-01	7.90260E-01	7.43332E-01
4	673.000	8.08708E-01	3.21157E-01	2.90927E-01	2.68134E-01
5	756.000	5.20340E-01	2.60029E-01	2.37453E-01	2.19935E-01
6	1107.000	4.56996E-01	1.66552E-01	1.53827E-01	1.44355E-01

TABLE A-IX (Page 31)

DOPPLER BROADENED (300°K) CAPTURE RESONANCE INTEGRALS BY RESONANCE

15. INDIUM 115

RES NO	RES ENERGY	DILUTE	L=0.00100 CM	L=0.00200 CM	L=0.00300 CM
1	1.456	3.10787E 03	2.10479E 03	1.69867E 03	1.45411E 03
2	3.860	4.37176E 01	4.37176E 01	4.24719E 01	3.98853E 01
3	9.120	4.18159E 01	4.18159E 01	4.05508E 01	3.76888E 01
4	12.100	1.56279E 00	1.56279E 00	1.56279E 00	1.56279E 00
5	23.000	4.50281E 00	4.50281E 00	4.50281E 00	4.50281E 00
6	39.900	4.42229E 00	4.13928E 00	4.42229E 00	4.17012E 00
7	46.300	4.11342E-01	4.10664E-01	4.11342E-01	4.09723E-01
8	48.600	5.58330E-01	5.58330E-01	5.58330E-01	5.58330E-01
9	63.200	5.47020E-01	5.47020E-01	5.47020E-01	5.47020E-01
10	83.500	2.80587E 00	2.76423E 00	2.73092E 00	2.69975E 00
11	95.000	5.73071E-01	5.73071E-01	5.73071E-01	5.73071E-01

RES NO	RES ENERGY	DILUTE	L=0.00400 CM	L=0.00500 CM	L=0.00600 CM
1	1.456	3.10787E 03	1.28800E 03	1.16679E 03	1.07318E 03
2	3.860	4.37176E 01	4.02073E 01	3.93134E 01	3.92841E 01
3	9.120	4.18159E 01	3.60190E 01	3.57177E 01	4.18159E 01
4	12.100	1.56279E 00	1.56279E 00	1.56279E 00	1.56279E 00
5	23.000	4.50281E 00	4.24357E 00	4.23065E 00	4.27686E 00
6	39.900	4.42229E 00	4.16729E 00	4.15633E 00	4.14968E 00
7	46.300	4.11342E-01	4.11342E-01	4.11342E-01	4.11342E-01
8	48.600	5.58330E-01	5.58330E-01	5.34346E-01	5.31495E-01
9	63.200	5.47020E-01	5.47020E-01	5.47020E-01	5.15785E-01
10	83.500	2.80587E 00	2.67346E 00	2.64697E 00	2.62217E 00
11	95.000	5.73071E-01	5.73071E-01	5.73071E-01	5.73071E-01

RES NO	RES ENERGY	DILUTE	L=0.00500 CM	L=0.01000 CM	L=0.01500 CM
1	1.456	3.10787E 03	1.16679E 03	8.41943E 02	6.90010E 02
2	3.860	4.37176E 01	3.93134E 01	3.70476E 01	3.50295E 01
3	9.120	4.18159E 01	3.57177E 01	3.30515E 01	2.91280E 01
4	12.100	1.56279E 00	1.56279E 00	1.50945E 00	1.53490E 00
5	23.000	4.50281E 00	4.23065E 00	4.14294E 00	4.07077E 00
6	39.900	4.42229E 00	4.17280E 00	4.01368E 00	3.85951E 00
7	46.300	4.11342E-01	4.11342E-01	4.03419E-01	4.00521E-01
8	48.600	5.58330E-01	5.34346E-01	5.58330E-01	5.45832E-01
9	63.200	5.47020E-01	5.47020E-01	5.34189E-01	5.33274E-01
10	83.500	2.80587E 00	2.64697E 00	2.53250E 00	2.43104E 00
11	95.000	5.73071E-01	5.73071E-01	4.63256E-01	5.73071E-01

TABLE A-IX (Page 32)

DOPPLER BROADENED (300°K) CAPTURE RESONANCE INTEGRALS BY RESONANCE

15. INDIUM 115 (continued)

RES NO	RES ENERGY	DILUTE	L=0.02000 CM	L=0.02500 CM	L=0.03000 CM
1	1.456	3.10787E 03	5.98985E 02	5.35871E 02	4.89432E 02
2	3.860	4.37176E 01	3.32188E 01	3.16492E 01	3.03206E 01
3	9.120	4.18159E 01	2.72700E 01	2.53849E 01	2.37644E 01
4	12.100	1.56279E 00	1.50617E 00	1.49144E 00	1.48026E 00
5	23.000	4.50281E 00	3.97201E 00	3.86529E 00	3.76571E 00
6	39.900	4.42229E 00	3.71978E 00	3.60031E 00	3.48303E 00
7	46.300	4.11342E-01	4.01238E-01	4.00097E-01	3.97258E-01
8	48.600	5.58330E-01	5.42283E-01	5.35470E-01	5.33185E-01
9	63.200	5.47020E-01	5.25853E-01	5.21785E-01	5.18816E-01
10	83.500	2.80587E 00	2.33951E 00	2.25818E 00	2.18291E 00
11	95.000	5.73071E-01	5.73071E-01	5.28813E-01	5.28978E-01

RES NO	RES ENERGY	DILUTE	L=0.01000 CM	L=0.02000 CM	L=0.03000 CM
1	1.456	3.10787E 03	8.41810E 02	5.98911E 02	4.88127E 02
2	3.860	4.37176E 01	3.71604E 01	3.32354E 01	3.03400E 01
3	9.120	4.18159E 01	3.21236E 01	2.71593E 01	2.37952E 01
4	12.100	1.56279E 00	1.53894E 00	1.50325E 00	1.48326E 00
5	23.000	4.50281E 00	4.18426E 00	3.96430E 00	3.77376E 00
6	39.900	4.42229E 00	4.06649E 00	3.74310E 00	3.44116E 00
7	46.300	4.11342E-01	4.06942E-01	4.01559E-01	3.97424E-01
8	48.600	5.58330E-01	5.48286E-01	5.40112E-01	5.33200E-01
9	63.200	5.47020E-01	5.37043E-01	5.27387E-01	5.19634E-01
10	83.500	2.80587E 00	2.53428E 00	2.34364E 00	2.18927E 00
11	95.000	5.73071E-01	5.60765E-01	5.47344E-01	5.37146E-01

RES NO	RES ENERGY	DILUTE	L=0.04000 CM	L=0.05000 CM	L=0.06000 CM
1	1.456	3.10787E 03	4.23995E 02	3.79218E 02	3.46197E 02
2	3.860	4.37176E 01	2.80447E 01	2.61573E 01	2.45771E 01
3	9.120	4.18159E 01	2.13179E 01	1.94212E 01	1.79194E 01
4	12.100	1.56279E 00	1.46255E 00	1.44366E 00	1.42620E 00
5	23.000	4.50281E 00	3.60810E 00	3.46152E 00	3.33235E 00
6	39.900	4.42229E 00	3.29585E 00	3.12557E 00	2.97471E 00
7	46.300	4.11342E-01	3.94034E-01	3.90506E-01	3.87394E-01
8	48.600	5.58330E-01	5.26938E-01	5.21106E-01	5.15461E-01
9	63.200	5.47020E-01	5.12768E-01	5.06312E-01	5.00234E-01
10	83.500	2.80587E 00	2.05696E 00	1.94253E 00	1.84271E 00
11	95.000	5.73071E-01	5.27553E-01	5.18895E-01	5.10653E-01

RES NO	RES ENERGY	DILUTE	L=0.02500 CM	L=0.05000 CM	L=0.07500 CM
1	1.456	3.10787E 03	5.36129E 02	3.79218E 02	3.09593E 02
2	3.860	4.37176E 01	3.16935E 01	2.61573E 01	2.26211E 01
3	9.120	4.18159E 01	2.53552E 01	1.94212E 01	1.61629E 01
4	12.100	1.56279E 00	1.49409E 00	1.44366E 00	1.40193E 00
5	23.000	4.50281E 00	3.86126E 00	3.46152E 00	3.15994E 00
6	39.900	4.42229E 00	3.66349E 00	3.12557E 00	2.78030E 00
7	46.300	4.11342E-01	3.99184E-01	3.90506E-01	3.82932E-01
8	48.600	5.58330E-01	5.36824E-01	5.21106E-01	5.07685E-01
9	63.200	5.47020E-01	5.23700E-01	5.06312E-01	4.91633E-01
10	83.500	2.80587E 00	2.26336E 00	1.94253E 00	1.71506E 00
11	95.000	5.73071E-01	5.41984E-01	5.18895E-01	4.99226E-01

TABLE A-IX (Page 33)

DOPPLER BROADENED (300°K) CAPTURE RESONANCE INTEGRALS BY RESONANCE

16. ANTIMONY 121

RES NO	RES ENERGY	DILUTE	L=0.02500 CM	L=0.05000 CM	L=0.07500 CM
1	6.240	1.02741E 02	6.59657E 01	5.19661E 01	4.37474E 01
2	15.400	5.49578E 01	3.47373E 01	2.70290E 01	2.26650E 01
3	29.700	1.06696E 01	8.72861E 00	7.59125E 00	6.76485E 00
4	53.500	1.54447E 00	1.46317E 00	1.41067E 00	1.36345E 00
5	64.500	3.18782E-01	3.18782E-01	3.10003E-01	3.07092E-01
6	73.800	2.78401E 00	2.51021E 00	2.32853E 00	2.17822E 00
7	89.600	3.71673E 00	3.20679E 00	2.87937E 00	2.63027E 00
8	111.400	4.01162E 00	3.32687E 00	2.91596E 00	2.61462E 00
9	126.800	3.13529E 00	2.65035E 00	2.34958E 00	2.12343E 00
10	131.900	1.20225E 00	1.12810E 00	1.07385E 00	1.03005E 00
11	144.200	1.19946E 00	1.11254E 00	1.05155E 00	9.98524E-01
12	149.900	2.15129E 00	1.90417E 00	1.74275E 00	1.61423E 00
13	160.500	1.49922E-01	1.49922E-01	1.47023E-01	1.45375E-01
14	167.100	1.12189E 00	1.03899E 00	9.81129E-01	9.30955E-01

17. CESIUM 133

RES NO	RES ENERGY	DILUTE	L=0.01000 CM	L=0.02000 CM	L=0.03000 CM
1	5.900	2.93476E 02	2.20969E 02	1.86189E 02	1.63197E 02
2	22.600	2.51509E 01	2.28140E 01	2.12590E 01	2.00014E 01
3	47.800	1.50352E 01	1.36480E 01	1.27283E 01	1.19791E 01
4	83.100	2.48950E 00	2.41210E 00	2.35503E 00	2.30965E 00
5	94.800	3.74786E 00	3.57191E 00	3.44597E 00	3.33560E 00
6	126.100	7.41132E 00	6.54720E 00	5.99268E 00	5.56448E 00
7	142.200	6.35290E-01	6.35290E-01	6.35290E-01	6.13598E-01
8	145.900	2.25300E 00	2.16353E 00	2.09700E 00	2.03931E 00
9	181.500	1.46669E-01	1.46669E-01	1.38424E-01	1.46669E-01
10	192.500	1.54797E-02	1.54797E-02	1.54797E-02	1.54797E-02
11	200.900	1.25339E 00	1.21700E 00	1.18966E 00	1.16539E 00
12	207.300	1.35303E-01	1.35303E-01	1.35303E-01	1.35303E-01
13	220.400	8.45447E-01	8.27382E-01	8.13953E-01	8.01664E-01
14	234.400	3.50632E 00	3.06564E 00	2.80079E 00	2.59890E 00
15	238.400	4.52972E-01	4.44985E-01	4.43022E-01	4.39043E-01
16	259.000	9.16045E-03	9.16045E-03	9.16045E-03	9.15316E-03
17	295.600	1.28183E 00	1.22357E 00	1.18100E 00	1.14411E 00
18	304.900	6.61000E-03	6.61000E-03	6.61000E-03	6.61000E-03
19	315.900	8.20342E-03	8.20342E-03	8.19794E-03	8.20342E-03
20	359.000	4.95685E-01	4.86549E-01	4.79394E-01	4.73115E-01
21	377.400	2.36481E-01	2.34027E-01	2.32838E-01	2.31074E-01
22	401.200	1.04744E 00	9.82941E-01	9.38076E-01	8.99689E-01
23	413.500	4.75016E-01	4.65306E-01	4.57764E-01	4.51124E-01
24	415.500	4.71553E-02	4.71553E-02	4.71553E-02	4.69453E-02
25	430.800	4.61819E-01	4.52201E-01	4.44795E-01	4.38232E-01
26	437.500	4.27699E-03	4.27536E-03	4.27699E-03	4.27462E-03
27	469.900	5.12740E-01	4.98767E-01	4.88395E-01	4.79024E-01
28	511.600	4.80334E-01	4.66591E-01	4.56275E-01	4.47063E-01
29	519.700	4.30044E-01	4.19209E-01	4.11209E-01	4.03914E-01
30	560.300	3.09207E-01	3.03752E-01	2.99451E-01	2.95662E-01

TABLE A-IX (Page 34)

DOPPLER BROADENED (300°K) CAPTURE RESONANCE INTEGRALS BY RESONANCE

17. CESIUM 133 (continued)

RES NO	RES ENERGY	DILUTE	L=0.01000 CM	L=0.02000 CM	L=0.03000 CM
31	568.400	1.04254E-01	1.03293E-01	1.03237E-01	1.02956E-01
32	585.500	4.20335E-01	4.07487E-01	3.97838E-01	3.89331E-01
33	622.600	5.25360E-03	5.25360E-03	5.25360E-03	5.25360E-03
34	646.300	1.75941E-01	1.74076E-01	1.72618E-01	1.71343E-01
35	684.400	1.11564E-02	1.11564E-02	1.11564E-02	1.11564E-02
36	712.300	1.26146E-02	1.26078E-02	1.26146E-02	1.26146E-02
37	726.600	2.32391E-01	2.28168E-01	2.24906E-01	2.22001E-01
38	738.000	4.10957E-03	4.10957E-03	4.10957E-03	4.10780E-03
39	762.900	1.65482E-01	1.63517E-01	1.61914E-01	1.60537E-01
40	795.700	2.79301E-01	2.70154E-01	2.63409E-01	2.57523E-01
41	807.600	3.17241E-02	3.17241E-02	3.17241E-02	3.17241E-02
42	821.000	5.10661E-03	5.10661E-03	5.10661E-03	5.10661E-03
43	832.700	1.63844E-02	1.63844E-02	1.63844E-02	1.63844E-02
44	863.900	1.98975E-01	1.94845E-01	1.91781E-01	1.88990E-01
45	872.300	4.42657E-02	4.42657E-02	4.40129E-02	4.39837E-02
46	906.600	1.39906E-01	1.38157E-01	1.36766E-01	1.35548E-01
47	914.100	5.78233E-03	5.77937E-03	5.78233E-03	5.78233E-03
48	917.200	5.74331E-03	5.74331E-03	5.73880E-03	5.74331E-03
49	970.500	1.28529E-02	1.28405E-02	1.28529E-02	1.28220E-02
50	986.400	6.09090E-02	6.06479E-02	6.03919E-02	6.02044E-02
51	994.200	9.89663E-02	9.80863E-02	9.74104E-02	9.67953E-02
52	1018.700	1.20227E-02	1.20227E-02	1.20227E-02	1.20227E-02
53	1021.400	1.38120E-01	1.35914E-01	1.34235E-01	1.32708E-01
54	1038.600	5.60314E-02	5.57947E-02	5.55949E-02	5.53946E-02
55	1069.600	6.51168E-02	6.47489E-02	6.44608E-02	6.42243E-02
56	1118.300	1.23377E-01	1.21343E-01	1.19812E-01	1.18434E-01
57	1134.900	9.36215E-02	9.26682E-02	9.18988E-02	9.12354E-02
58	1156.200	3.07216E-02	3.07216E-02	3.06016E-02	3.05005E-02
59	1177.000	6.49374E-02	6.45177E-02	6.42112E-02	6.39240E-02
60	1187.000	2.60471E-02	2.60471E-02	2.60471E-02	2.58919E-02
61	1239.700	1.05675E-01	1.03951E-01	1.02657E-01	1.01504E-01
62	1249.300	4.09319E-02	4.07558E-02	4.06646E-02	4.05479E-02
63	1267.600	1.14694E-01	1.12265E-01	1.10358E-01	1.08708E-01
64	1272.600	3.59024E-03	3.59024E-03	3.59024E-03	3.58715E-03
65	1280.100	9.00233E-02	8.88906E-02	8.80148E-02	8.71972E-02
66	1306.300	2.59972E-03	2.59972E-03	2.59972E-03	2.59794E-03
67	1312.800	2.57404E-03	2.57404E-03	2.57404E-03	2.57404E-03
68	1322.000	8.05675E-02	7.96711E-02	7.89704E-02	7.83385E-02
69	1329.300	7.65396E-02	7.57559E-02	7.51339E-02	7.45860E-02
70	1345.400	1.68063E-03	1.68063E-03	1.68063E-03	1.68063E-03
71	1389.800	3.00648E-02	2.99634E-02	2.99038E-02	2.98461E-02
72	1423.200	6.61469E-02	6.55353E-02	6.50514E-02	6.46168E-02
73	1429.100	1.09684E-02	1.02479E-02	1.09684E-02	1.09684E-02
74	1443.300	3.63087E-03	3.63087E-03	3.63087E-03	3.63087E-03
75	1453.100	7.37428E-02	7.28520E-02	7.21676E-02	7.15261E-02

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DOPPLER BROADENED (300°K) CAPTURE RESONANCE INTEGRALS BY RESONANCE

17. CESIUM 133 (continued)

RES NO	RES ENERGY	DILUTE	L=0.01000 CM	L=0.02000 CM	L=0.03000 CM
76	1464.600	1.04431E-02	1.04431E-02	1.04431E-02	1.04431E-02
77	1480.900	4.83844E-03	4.83844E-03	4.83434E-03	4.83844E-03
78	1524.900	4.42394E-02	4.40039E-02	4.38038E-02	4.36456E-02
79	1533.100	1.30091E-02	1.30091E-02	1.30091E-02	1.28727E-02
80	1545.500	2.53041E-02	2.52168E-02	2.51911E-02	2.51399E-02
81	1583.800	3.09210E-03	3.09210E-03	3.09210E-03	3.09210E-03
82	1594.200	7.45385E-02	7.32260E-02	7.21758E-02	7.12873E-02
83	1616.300	4.73571E-02	4.70364E-02	4.67807E-02	4.65537E-02
84	1627.000	2.41783E-03	2.41783E-03	2.41783E-03	2.41783E-03
85	1664.600	3.81122E-02	3.79088E-02	3.77671E-02	3.76353E-02
86	1682.500	6.73378E-02	6.62061E-02	6.52923E-02	6.45213E-02
87	1705.500	4.30516E-02	4.27764E-02	4.25506E-02	4.23560E-02
88	1726.000	1.15541E-03	1.15541E-03	1.15541E-03	1.15541E-03
89	1734.800	2.40815E-02	2.40314E-02	2.39624E-02	2.39151E-02
90	1760.900	4.07030E-02	4.04429E-02	4.02417E-02	4.00638E-02
91	1809.600	1.66132E-02	1.65230E-02	1.65469E-02	1.65404E-02
92	1828.600	2.54930E-03	2.54930E-03	2.54930E-03	2.54930E-03
93	1843.000	3.01307E-03	3.01307E-03	3.01307E-03	3.01307E-03
94	1849.300	1.44104E-02	1.42867E-02	1.43655E-02	1.43416E-02
95	1853.700	7.00928E-03	7.00928E-03	7.00928E-03	7.00928E-03
96	1899.500	2.41554E-03	2.41554E-03	2.41554E-03	2.41554E-03
97	1915.500	6.56430E-03	6.56430E-03	6.56430E-03	6.55131E-03
98	1934.400	1.86625E-03	1.86625E-03	1.86625E-03	1.86625E-03
99	1954.000	2.73043E-02	2.71986E-02	2.71106E-02	2.70343E-02
100	2000.000	1.35556E-03	1.35556E-03	1.35556E-03	1.35556E-03
101	2051.000	1.23321E-02	1.22396E-02	1.23321E-02	1.22761E-02
102	2060.000	4.68097E-02	4.60939E-02	4.55231E-02	4.50260E-02
103	2090.000	2.08261E-03	2.08261E-03	2.08261E-03	2.08261E-03
104	2099.000	2.78474E-02	2.77121E-02	2.76135E-02	2.75170E-02
105	2114.000	8.14847E-04	8.14847E-04	8.14847E-04	8.14847E-04
106	2122.000	3.92354E-02	3.88268E-02	3.85101E-02	3.82260E-02
107	2133.000	1.99949E-03	1.99949E-03	1.99949E-03	1.99821E-03
108	2161.000	3.79521E-03	3.79521E-03	3.79521E-03	3.79521E-03
109	2172.000	8.40104E-03	8.40104E-03	8.33420E-03	8.35789E-03
110	2182.000	2.70115E-02	2.68731E-02	2.67733E-02	2.66800E-02
111	2197.000	1.43675E-02	1.43205E-02	1.43098E-02	1.42959E-02
112	2261.000	3.54328E-02	3.50668E-02	3.47782E-02	3.45248E-02
113	2280.000	3.11029E-02	3.08687E-02	3.06859E-02	3.05106E-02
114	2295.000	1.67621E-02	1.67159E-02	1.66888E-02	1.66609E-02
115	2312.000	2.98760E-02	2.96587E-02	2.94959E-02	2.93322E-02
116	2343.000	6.99626E-04	6.99626E-04	6.99423E-04	6.99626E-04

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DOPPLER BROADENED (300°K) CAPTURE RESONANCE INTEGRALS BY RESONANCE

17. CESIUM 133 (continued)

RES NO	RES ENERGY	DILUTE	L=0.01000 CM	L=0.02000 CM	L=0.03000 CM
117	2352.000	6.94282E-04	6.94282E-04	6.94282E-04	6.93995E-04
118	2376.000	3.92579E-02	3.84342E-02	3.78021E-02	3.72553E-02
119	2387.000	3.26518E-03	3.26518E-03	3.26276E-03	3.26518E-03
120	2392.000	4.78515E-03	4.78515E-03	4.78515E-03	4.78515E-03
121	2429.000	2.59545E-02	2.57964E-02	2.56692E-02	2.55544E-02
122	2447.000	1.64609E-03	1.64609E-03	1.64609E-03	1.64513E-03
123	2458.000	6.68601E-04	6.68601E-04	6.68407E-04	6.68601E-04
124	2474.000	1.24941E-02	1.24619E-02	1.24510E-02	1.24334E-02
125	2492.000	1.58717E-03	1.58717E-03	1.58634E-03	1.58626E-03
126	2503.000	7.86627E-03	7.86627E-03	7.86627E-03	7.84433E-03
127	2524.000	6.34092E-04	6.34092E-04	6.34092E-04	6.34092E-04
128	2537.000	8.64482E-03	8.64482E-03	8.61870E-03	8.61516E-03
129	2561.000	1.88630E-02	1.87940E-02	1.87385E-02	1.86882E-02
130	2570.000	8.42424E-03	8.42424E-03	8.39586E-03	8.39651E-03
131	2591.000	4.07834E-03	4.07834E-03	4.07834E-03	4.07834E-03
132	2604.000	1.35084E-02	1.34697E-02	1.34535E-02	1.34337E-02
133	2623.000	1.46008E-03	1.46008E-03	1.46008E-03	1.46008E-03
134	2683.000	1.73961E-02	1.73256E-02	1.72870E-02	1.72409E-02
135	2705.000	5.79202E-04	5.79202E-04	5.79202E-04	5.78955E-04
136	2723.000	2.74864E-02	2.71518E-02	2.68909E-02	2.66426E-02
137	2733.000	5.67395E-04	5.67395E-04	5.67395E-04	5.67395E-04
138	2755.000	2.72707E-02	2.69206E-02	2.66505E-02	2.63953E-02
139	2777.000	1.35156E-03	1.35156E-03	1.35156E-03	1.35082E-03
140	2794.000	2.19757E-02	2.18241E-02	2.17102E-02	2.16000E-02
141	2838.000	1.29408E-03	1.29408E-03	1.29408E-03	1.29408E-03
142	2876.000	5.12373E-04	5.12373E-04	5.12373E-04	5.12373E-04
143	2892.000	5.06720E-04	5.06720E-04	5.06720E-04	5.06720E-04
144	2898.000	1.81274E-02	1.80403E-02	1.79713E-02	1.79079E-02
145	2910.000	1.59715E-02	1.59122E-02	1.58654E-02	1.58220E-02
146	2925.000	5.18514E-04	5.18464E-04	5.18514E-04	5.18514E-04
147	2943.000	2.03980E-02	2.02568E-02	2.01475E-02	2.00449E-02
148	2982.000	1.24570E-02	1.24235E-02	1.23997E-02	1.23806E-02
149	3007.000	1.15296E-02	1.15024E-02	1.14815E-02	1.14654E-02
150	3016.000	1.86239E-02	1.85125E-02	1.84258E-02	1.83452E-02
151	3071.000	6.40868E-03	6.40868E-03	6.39136E-03	6.39701E-03
152	3095.000	3.19204E-03	3.19204E-03	3.19204E-03	3.19204E-03
153	3114.000	3.93693E-03	3.93693E-03	3.93693E-03	3.93693E-03
154	3120.000	1.86374E-02	1.85104E-02	1.84076E-02	1.83142E-02
155	3150.000	5.48274E-03	5.48274E-03	5.48274E-03	5.46829E-03
156	3190.000	2.18901E-02	2.15498E-02	2.12863E-02	2.10406E-02
157	3306.000	1.94284E-02	1.91972E-02	1.90271E-02	1.88620E-02
158	3335.000	1.41950E-02	1.41357E-02	1.40836E-02	1.40383E-02
159	3354.000	1.50949E-02	1.50157E-02	1.49538E-02	1.48962E-02
160	3373.000	1.01073E-02	1.00870E-02	1.00661E-02	1.00517E-02
161	3402.000	3.42440E-03	3.42440E-03	3.42440E-03	3.42440E-03
162	3422.000	1.56815E-02	1.55845E-02	1.55021E-02	1.54292E-02
163	3444.000	6.84752E-03	6.82614E-03	6.83226E-03	6.82241E-03
164	3480.000	1.88709E-02	1.85542E-02	1.83142E-02	1.80960E-02
165	3500.000	9.97309E-03	9.94782E-03	9.93052E-03	9.91380E-03

TABLE A-IX (Page 37)

DOPPLER BROADENED (300°K) CAPTURE RESONANCE INTEGRALS BY RESONANCE

17. CESIUM 133 (continued)

RES NO	RES ENERGY	DILUTE	L=0.10000 CM	L=0.20000 CM	L=0.30000 CM
1	5.900	2.93476E 02	9.83660E 01	7.03206E 01	5.74953E 01
2	22.600	2.51509E 01	1.47496E 01	1.12214E 01	9.32472E 00
3	47.800	1.50352E 01	8.82175E 00	6.71175E 00	5.57903E 00
4	83.100	2.48950E 00	2.04644E 00	1.78248E 00	1.58948E 00
5	94.800	3.74786E 00	2.77941E 00	2.28643E 00	1.96656E 00
6	126.100	7.41132E 00	3.89499E 00	2.91588E 00	2.42223E 00
7	142.200	6.35290E-01	5.85210E-01	5.50363E-01	5.19952E-01
8	145.900	2.25300E 00	1.73694E 00	1.45560E 00	1.26479E 00
9	181.500	1.46669E-01	1.42010E-01	1.39844E-01	1.37148E-01
10	192.500	1.54797E-02	1.54797E-02	1.53719E-02	1.53280E-02
11	200.900	1.25339E 00	1.03287E 00	8.99052E-01	8.00488E-01
12	207.300	1.35303E-01	1.31613E-01	1.29326E-01	1.26656E-01
13	220.400	8.45447E-01	7.33326E-01	6.59365E-01	6.01334E-01
14	234.400	3.50632E 00	1.85621E 00	1.43451E 00	1.22289E 00
15	238.400	4.52972E-01	4.16578E-01	3.90528E-01	3.68618E-01
16	259.000	9.16045E-03	9.16045E-03	9.16045E-03	9.09522E-03
17	295.600	1.28183E 00	9.55736E-01	7.88290E-01	6.79386E-01
18	304.900	6.61000E-03	6.61000E-03	6.61000E-03	6.58582E-03
19	315.900	8.20342E-03	8.20342E-03	8.14925E-03	8.15303E-03
20	359.000	4.95685E-01	4.37334E-01	3.97491E-01	3.65661E-01
21	377.400	2.36481E-01	2.22257E-01	2.11817E-01	2.02808E-01
22	401.200	1.04744E 00	7.20453E-01	5.78545E-01	4.93788E-01
23	413.500	4.75016E-01	4.13482E-01	3.72431E-01	3.40103E-01
24	415.500	4.71553E-02	4.64122E-02	4.58186E-02	4.54391E-02
25	430.800	4.61819E-01	4.01130E-01	3.60811E-01	3.29123E-01
26	437.500	4.27699E-03	4.27699E-03	4.24641E-03	4.26171E-03
27	469.900	5.12740E-01	4.27699E-01	3.75164E-01	3.35862E-01
28	511.600	4.80334E-01	3.96980E-01	3.46411E-01	3.09060E-01
29	519.700	4.30044E-01	3.63697E-01	3.21829E-01	2.89949E-01
30	560.300	3.09207E-01	2.74126E-01	2.49988E-01	2.30608E-01
31	568.400	1.04254E-01	1.00476E-01	9.75870E-02	9.50033E-02
32	585.500	4.20335E-01	3.43281E-01	2.97942E-01	2.64904E-01
33	622.600	5.25360E-03	5.25360E-03	5.23063E-03	5.22130E-03
34	646.300	1.75941E-01	1.63658E-01	1.54725E-01	1.46958E-01
35	684.400	1.11564E-02	1.10331E-02	1.10775E-02	1.10263E-02
36	712.300	1.26146E-02	1.26146E-02	1.24907E-02	1.24283E-02
37	726.600	2.32391E-01	2.05473E-01	1.87253E-01	1.72591E-01
38	738.000	4.10957E-03	4.10957E-03	4.08938E-03	4.08503E-03
39	762.900	1.65482E-01	1.52336E-01	1.42960E-01	1.34856E-01
40	795.700	2.79301E-01	2.25939E-01	1.95752E-01	1.73910E-01
41	807.600	3.17241E-02	3.11298E-02	3.09069E-02	3.06186E-02
42	821.000	5.10661E-03	5.10661E-03	5.08714E-03	5.07304E-03
43	832.700	1.63844E-02	1.63844E-02	1.61510E-02	1.60531E-02
44	863.900	1.98975E-01	1.73328E-01	1.56555E-01	1.43283E-01
45	872.300	4.42657E-02	4.33349E-02	4.26189E-02	4.19665E-02
46	906.600	1.39906E-01	1.28374E-01	1.20193E-01	1.13178E-01
47	914.100	5.78233E-03	5.78233E-03	5.74746E-03	5.74102E-03
48	917.200	5.74331E-03	5.67682E-03	5.72166E-03	5.70100E-03
49	970.500	1.28529E-02	1.28529E-02	1.27561E-02	1.26498E-02
50	986.400	6.09090E-02	5.89464E-02	5.74208E-02	5.60470E-02

TABLE A-IX (Page 38)

DOPPLER BROADENED (300°K) CAPTURE RESONANCE INTEGRALS BY RESONANCE

17. CESIUM 133 (continued)

RES NO	RES ENERGY	DILUTE	L=0.10000 CM	L=0.20000 CM	L=0.30000 CM
51	994.200	9.89663E-02	9.31366E-02	8.87852E-02	8.50082E-02
52	1018.700	1.20227E-02	1.14450E-02	1.18335E-02	1.18226E-02
53	1021.400	1.38120E-01	1.24053E-01	1.14301E-01	1.06404E-01
54	1038.600	5.60314E-02	5.43073E-02	5.29585E-02	5.17472E-02
55	1069.600	6.51168E-02	6.26489E-02	6.07340E-02	5.90196E-02
56	1118.300	1.23377E-01	1.10537E-01	1.01624E-01	9.45855E-02
57	1134.900	9.36215E-02	8.72732E-02	8.26534E-02	7.86371E-02
58	1156.200	3.07216E-02	3.01738E-02	2.97458E-02	2.93584E-02
59	1177.000	6.49374E-02	6.21677E-02	6.00298E-02	5.81436E-02
60	1187.000	2.60471E-02	2.56483E-02	2.53314E-02	2.50491E-02
61	1239.700	1.05675E-01	9.48281E-02	8.73135E-02	8.13734E-02
62	1249.300	4.09319E-02	3.98689E-02	3.90411E-02	3.82974E-02
63	1267.600	1.14694E-01	9.95239E-02	8.97913E-02	8.23249E-02
64	1272.600	3.59024E-03	3.59024E-03	3.57736E-03	3.56965E-03
65	1280.100	9.00233E-02	8.26099E-02	7.72980E-02	7.29069E-02
66	1306.300	2.59972E-03	2.59972E-03	2.59041E-03	2.58743E-03
67	1312.800	2.57404E-03	2.57404E-03	2.56438E-03	2.56190E-03
68	1322.000	8.05675E-02	7.46813E-02	7.04151E-02	6.68091E-02
69	1329.300	7.65396E-02	7.13597E-02	6.75620E-02	6.43408E-02
70	1345.400	1.68063E-03	1.68063E-03	1.68063E-03	1.67665E-03
71	1389.800	3.00648E-02	2.94495E-02	2.89751E-02	2.85390E-02
72	1423.200	6.61469E-02	6.20841E-02	5.90680E-02	5.65176E-02
73	1429.100	1.09684E-02	1.09684E-02	1.08370E-02	1.07837E-02
74	1443.300	3.63087E-03	3.63087E-03	3.61783E-03	3.60889E-03
75	1453.100	7.37428E-02	6.79207E-02	6.37398E-02	6.02692E-02
76	1464.600	1.04431E-02	1.04431E-02	1.04431E-02	1.02250E-02
77	1480.900	4.83844E-03	4.83844E-03	4.81690E-03	4.79497E-03
78	1524.900	4.42394E-02	4.26033E-02	4.13331E-02	4.01963E-02
79	1533.100	1.30091E-02	1.28940E-02	1.27913E-02	1.27020E-02
80	1545.500	2.53041E-02	2.48293E-02	2.44650E-02	2.41299E-02
81	1583.800	3.09210E-03	3.09210E-03	3.08079E-03	3.07374E-03
82	1594.200	7.45385E-02	6.62047E-02	6.06828E-02	5.62491E-02
83	1616.300	4.73571E-02	4.51849E-02	4.35232E-02	4.20821E-02
84	1627.000	2.41783E-03	2.39600E-03	2.40920E-03	2.40647E-03
85	1664.600	3.81122E-02	3.68023E-02	3.57827E-02	3.48672E-02
86	1682.500	6.73378E-02	6.01045E-02	5.52751E-02	5.13742E-02
87	1705.500	4.30516E-02	4.11675E-02	3.97228E-02	3.84625E-02
88	1726.000	1.15541E-03	1.15541E-03	1.15541E-03	1.15261E-03
89	1734.800	2.40815E-02	2.36000E-02	2.32305E-02	2.28904E-02
90	1760.900	4.07030E-02	3.89690E-02	3.76374E-02	3.64715E-02
91	1809.600	1.66132E-02	1.63860E-02	1.62085E-02	1.60489E-02
92	1828.600	2.54930E-03	2.54930E-03	2.53995E-03	2.53404E-03
93	1843.000	3.01307E-03	3.01307E-03	3.00092E-03	2.99637E-03
94	1849.300	1.44104E-02	1.42404E-02	1.41014E-02	1.39823E-02
95	1853.700	7.00928E-03	6.88340E-03	6.91629E-03	6.89119E-03

TABLE A-IX (Page 39)

DOPPLER BROADENED (300°K) CAPTURE RESONANCE INTEGRALS BY RESONANCE

17. CESIUM 133 (continued)

RES NO	RES ENERGY	DILUTE	L=0.10000 CM	L=0.20000 CM	L=0.30000 CM
96	1899.500	2.41554E-03	2.41554E-03	2.40642E-03	2.40345E-03
97	1915.500	6.56430E-03	6.40425E-03	6.46852E-03	6.46559E-03
98	1934.400	1.86625E-03	1.86625E-03	1.85996E-03	1.85760E-03
99	1954.000	2.73043E-02	2.65532E-02	2.59673E-02	2.54339E-02
100	2000.000	1.35556E-03	1.35556E-03	1.35556E-03	1.35076E-03
101	2051.000	1.23321E-02	1.22002E-02	1.20867E-02	1.19932E-02
102	2060.000	4.68097E-02	4.22252E-02	3.91331E-02	3.66113E-02
103	2090.000	2.08261E-03	2.05722E-03	2.08261E-03	2.07176E-03
104	2099.000	2.78474E-02	2.69441E-02	2.62409E-02	2.56030E-02
105	2114.000	8.14847E-04	8.14847E-04	8.14847E-04	8.12987E-04
106	2122.000	3.92354E-02	3.65697E-02	3.46585E-02	3.29997E-02
107	2133.000	1.99949E-03	1.97146E-03	1.99170E-03	1.98941E-03
108	2161.000	3.79521E-03	3.79521E-03	3.79521E-03	3.74925E-03
109	2172.000	8.40104E-03	8.34745E-03	8.28136E-03	8.23579E-03
110	2182.000	2.70115E-02	2.61064E-02	2.54031E-02	2.47665E-02
111	2197.000	1.43675E-02	1.41652E-02	1.40076E-02	1.38645E-02
112	2261.000	3.54328E-02	3.30410E-02	3.13330E-02	2.98451E-02
113	2280.000	3.11029E-02	2.95305E-02	2.83594E-02	2.73444E-02
114	2295.000	1.67621E-02	1.64602E-02	1.62292E-02	1.60161E-02
115	2312.000	2.98760E-02	2.84320E-02	2.73516E-02	2.64106E-02
116	2343.000	6.99626E-04	6.99626E-04	6.99626E-04	6.97959E-04
117	2352.000	6.94282E-04	6.94282E-04	6.94282E-04	6.92575E-04
118	2376.000	3.92579E-02	3.42839E-02	3.11918E-02	2.88257E-02
119	2387.000	3.26518E-03	3.26518E-03	3.26518E-03	3.24552E-03
120	2392.000	4.78515E-03	4.78515E-03	4.75497E-03	4.72948E-03
121	2429.000	2.59545E-02	2.48807E-02	2.40644E-02	2.33384E-02
122	2447.000	1.64609E-03	1.64609E-03	1.63924E-03	1.63747E-03
123	2458.000	6.68601E-04	6.68601E-04	6.68601E-04	6.67030E-04
124	2474.000	1.24941E-02	1.23238E-02	1.21911E-02	1.20707E-02
125	2492.000	1.58717E-03	1.58717E-03	1.58717E-03	1.58125E-03
126	2503.000	7.86627E-03	7.81113E-03	7.74815E-03	7.70570E-03
127	2524.000	6.34092E-04	6.34092E-04	6.34092E-04	6.32630E-04
128	2537.000	8.64482E-03	8.57673E-03	8.50108E-03	8.44803E-03
129	2561.000	1.88630E-02	1.83810E-02	1.80053E-02	1.76635E-02
130	2570.000	8.42424E-03	8.35921E-03	8.28556E-03	8.23558E-03
131	2591.000	4.07834E-03	4.07834E-03	4.04831E-03	4.05013E-03
132	2604.000	1.35084E-02	1.32896E-02	1.31232E-02	1.29688E-02
133	2623.000	1.46008E-03	1.46008E-03	1.45412E-03	1.45266E-03
134	2683.000	1.73961E-02	1.69681E-02	1.66349E-02	1.63313E-02
135	2705.000	5.79202E-04	5.79202E-04	5.79202E-04	5.77772E-04
136	2723.000	2.74864E-02	2.53061E-02	2.37955E-02	2.25400E-02
137	2733.000	5.67395E-04	5.67395E-04	5.67394E-04	5.65996E-04
138	2755.000	2.72707E-02	2.50109E-02	2.34667E-02	2.21664E-02
139	2777.000	1.35156E-03	1.35156E-03	1.35156E-03	1.34640E-03
140	2794.000	2.19757E-02	2.09718E-02	2.02250E-02	1.95646E-02

TABLE A-IX (Page 40)

DOPPLER BROADENED (300°K) CAPTURE RESONANCE INTEGRALS BY RESONANCE

17. CESIUM 133 (continued)

RES NO	RES ENERGY	DILUTE	L=0.10000 CM	L=0.20000 CM	L=0.30000 CM
141	2838.000	1.29408E-03	1.29408E-03	1.29408E-03	1.28910E-03
142	2876.000	5.12373E-04	5.12373E-04	5.10141E-04	5.12373E-04
143	2892.000	5.06720E-04	5.06720E-04	5.06720E-04	5.05439E-04
144	2898.000	1.81274E-02	1.75356E-02	1.70790E-02	1.66662E-02
145	2910.000	1.59715E-02	1.55647E-02	1.52477E-02	1.49593E-02
146	2925.000	5.18514E-04	5.18514E-04	5.18514E-04	5.17211E-04
147	2943.000	2.03980E-02	1.94515E-02	1.87513E-02	1.81327E-02
148	2982.000	1.24570E-02	1.22357E-02	1.20654E-02	1.19090E-02
149	3007.000	1.15296E-02	1.13435E-02	1.12013E-02	1.10700E-02
150	3016.000	1.86239E-02	1.78738E-02	1.73104E-02	1.68054E-02
151	3071.000	6.40868E-03	6.36641E-03	6.31560E-03	6.28284E-03
152	3095.000	3.19204E-03	3.19204E-03	3.17567E-03	3.17206E-03
153	3114.000	3.93693E-03	3.91918E-03	3.90899E-03	3.88927E-03
154	3120.000	1.86374E-02	1.77687E-02	1.71288E-02	1.65646E-02
155	3150.000	5.48274E-03	5.45067E-03	5.41493E-03	5.38985E-03
156	3190.000	2.18901E-02	1.97430E-02	1.83352E-02	1.72067E-02
157	3306.000	1.94284E-02	1.79580E-02	1.69417E-02	1.60960E-02
158	3335.000	1.41950E-02	1.37734E-02	1.34476E-02	1.31530E-02
159	3354.000	1.50949E-02	1.45590E-02	1.41529E-02	1.37864E-02
160	3373.000	1.01073E-02	9.94415E-03	9.81871E-03	9.70362E-03
161	3402.000	3.42440E-03	3.40980E-03	3.40266E-03	3.38897E-03
162	3422.000	1.56815E-02	1.50026E-02	1.45013E-02	1.40575E-02
163	3444.000	6.84752E-03	6.78871E-03	6.72776E-03	6.68314E-03
164	3480.000	1.88709E-02	1.69207E-02	1.56760E-02	1.46910E-02
165	3500.000	9.97309E-03	9.80393E-03	9.67362E-03	9.55434E-03

18. LANTHENUM 139

RES NO	RES ENERGY	DILUTE	L=0.01000 CM	L=0.02000 CM	L=0.03000 CM
1	72.400	9.08134E 00	7.45551E 00	6.50848E 00	5.82796E 00

RES NO	RES ENERGY	DILUTE	L=0.04000 CM	L=0.05000 CM	L=0.06000 CM
1	72.400	9.08134E 00	5.30090E 00	4.88333E 00	4.54316E 00

RES NO	RES ENERGY	DILUTE	L=0.02500 CM	L=0.05000 CM	L=0.07500 CM
1	72.400	9.08134E 00	6.14446E 00	4.88333E 00	4.13432E 00

RES NO	RES ENERGY	DILUTE	L=0.05000 CM	L=0.10000 CM	L=0.15000 CM
1	72.400	9.08134E 00	4.88333E 00	3.63347E 00	2.99403E 00

TABLE A-IX (Page 41)

DOPPLER BROADENED (300°K) CAPTURE RESONANCE INTEGRALS BY RESONANCE

19. SAMARIUM 152

RES NO	RES ENERGY	DILUTE	L=0.01500 CM	L=0.03000 CM	L=0.04500 CM
1	8.010	2.11937E 03	6.70947E 02	4.86858E 02	4.01177E 02

RES NO	RES ENERGY	DILUTE	L=0.02500 CM	L=0.05000 CM	L=0.07500 CM
1	8.010	2.11937E 03	5.30662E 02	3.81240E 02	3.12767E 02

20. TUNGSTEN 186

RES NO	RES ENERGY	DILUTE	L=0.00500 CM	L=0.01000 CM	L=0.01500 CM
1	18.800	5.13524E 02	2.79868E 02	2.24316E 02	1.94254E 02
2	111.300	1.32535E-02	1.32535E-02	1.32535E-02	1.32535E-02
3	171.500	2.77208E 00	2.61200E 00	2.49642E 00	2.39639E 00
4	197.600	6.25720E-02	6.25720E-02	6.25720E-02	6.23429E-02
5	218.000	4.79670E 00	3.80296E 00	3.31978E 00	2.99861E 00
6	245.000	1.36448E-02	1.36448E-02	1.36448E-02	1.36448E-02
7	288.000	9.38695E-01	9.10385E-01	8.88854E-01	8.69602E-01
8	407.000	8.41498E-01	8.02241E-01	7.73353E-01	7.47901E-01
9	458.000	1.54858E-02	1.54858E-02	1.54858E-02	1.54858E-02
10	512.000	4.37698E-01	4.23976E-01	4.13428E-01	4.03904E-01
11	543.000	8.01207E-01	7.15665E-01	6.61891E-01	6.19901E-01
12	666.000	7.06895E-01	6.35729E-01	5.91776E-01	5.56983E-01
13	732.000	6.75544E-01	6.08116E-01	5.68152E-01	5.37637E-01
14	774.000	3.78847E-02	3.78847E-02	3.73880E-02	3.76473E-02
15	835.000	9.16267E-02	9.11138E-02	9.06356E-02	9.02111E-02
16	858.000	1.08475E-02	1.08475E-02	1.08475E-02	1.08130E-02
17	968.000	2.96180E-01	2.72068E-01	2.56604E-01	2.44323E-01
18	1080.000	1.96352E-01	1.84006E-01	1.75545E-01	1.68494E-01
19	1130.000	1.75262E-01	1.66496E-01	1.60267E-01	1.54993E-01
20	1190.000	1.48873E-01	1.39703E-01	1.33408E-01	1.28216E-01
21	1420.000	1.34783E-01	1.31261E-01	1.28659E-01	1.26333E-01
22	1510.000	1.15911E-01	1.09318E-01	1.04749E-01	1.01050E-01
23	1550.000	7.37842E-03	7.37842E-03	7.37842E-03	7.35305E-03
24	1800.000	4.99337E-02	4.94877E-02	4.91324E-02	4.88067E-02
25	1940.000	5.90324E-02	5.71747E-02	5.58219E-02	5.46373E-02
26	2040.000	5.66327E-02	5.52766E-02	5.42587E-02	5.33601E-02
27	2120.000	3.80480E-02	3.77507E-02	3.75172E-02	3.72923E-02

TABLE A-IX (Page 42)

DOPPLER BROADENED (300°K) CAPTURE RESONANCE INTEGRALS BY RESONANCE

20. TUNGSTEN 186 (continued)

RES NO	RES ENERGY	DILUTE	L=0.02000 CM	L=0.02500 CM	L=0.03000 CM
1	18.800	5.13524E 02	1.74433E 02	1.59890E 02	1.48602E 02
2	111.300	1.32535E-02	1.32535E-02	1.32535E-02	1.32535E-02
3	171.500	2.77208E 00	2.30623E 00	2.22658E 00	2.15320E 00
4	197.600	6.25720E-02	6.21710E-02	6.21342E-02	6.20705E-02
5	218.000	4.79670E 00	2.76474E 00	2.58594E 00	2.44660E 00
6	245.000	1.36448E-02	1.36448E-02	1.36448E-02	1.36078E-02
7	288.000	9.38695E-01	8.51967E-01	8.35629E-01	8.20347E-01
8	407.000	8.41498E-01	7.25359E-01	7.04245E-01	6.84879E-01
9	458.000	1.54858E-02	1.54446E-02	1.54327E-02	1.54290E-02
10	512.000	4.37698E-01	3.95152E-01	3.87236E-01	3.79595E-01
11	543.000	8.01207E-01	5.85558E-01	5.56404E-01	5.31292E-01
12	666.000	7.06895E-01	5.28379E-01	5.04102E-01	4.83173E-01
13	732.000	6.75544E-01	5.12547E-01	4.91479E-01	4.73563E-01
14	774.000	3.78847E-02	3.75595E-02	3.76004E-02	3.75072E-02
15	835.000	9.16267E-02	8.98182E-02	8.94828E-02	8.91414E-02
16	858.000	1.08475E-02	1.08240E-02	1.08194E-02	1.08102E-02
17	968.000	2.96180E-01	2.33838E-01	2.24776E-01	2.16835E-01
18	1080.000	1.96352E-01	1.62369E-01	1.56951E-01	1.52116E-01
19	1130.000	1.75262E-01	1.50273E-01	1.46015E-01	1.42129E-01
20	1190.000	1.48873E-01	1.23684E-01	1.19670E-01	1.16076E-01
21	1420.000	1.34783E-01	1.24210E-01	1.22246E-01	1.20394E-01
22	1510.000	1.15911E-01	9.78411E-02	9.49683E-02	9.23647E-02
23	1550.000	7.37842E-03	7.36075E-03	7.35760E-03	7.35690E-03
24	1800.000	4.99337E-02	4.85081E-02	4.82220E-02	4.79466E-02
25	1940.000	5.90324E-02	5.35880E-02	5.25997E-02	5.16803E-02
26	2040.000	5.66327E-02	5.25410E-02	5.17794E-02	5.10644E-02
27	2120.000	3.80480E-02	3.70926E-02	3.69017E-02	3.67179E-02

TABLE A-IX (Page 43)

DOPPLER BROADENED (300°K) CAPTURE RESONANCE INTEGRALS BY RESONANCE

20. TUNGSTEN 186 (continued)

RES NO	RES ENERGY	DILUTE	L=0.01000 CM	L=0.02000 CM	L=0.03000 CM
1	18.800	5.13524E 02	2.24316E 02	1.74433E 02	1.48602E 02
2	111.300	1.32535E-02	1.32535E-02	1.32535E-02	1.32535E-02
3	171.500	2.77208E 00	2.49642E 00	2.30623E 00	2.15320E 00
4	197.600	6.25720E-02	6.25720E-02	6.21710E-02	6.20705E-02
5	218.000	4.79670E 00	3.31978E 00	2.76474E 00	2.44660E 00
6	245.000	1.36448E-02	1.36448E-02	1.36448E-02	1.36078E-02
7	288.000	9.38695E-01	8.88854E-01	8.51967E-01	8.20347E-01
8	407.000	8.41498E-01	7.73353E-01	7.25359E-01	6.84879E-01
9	458.000	1.54858E-02	1.54858E-02	1.54446E-02	1.54290E-02
10	512.000	4.37698E-01	4.13428E-01	3.95152E-01	3.79595E-01
11	543.000	8.01207E-01	6.61891E-01	5.85558E-01	5.31292E-01
12	666.000	7.06895E-01	5.91776E-01	5.28379E-01	4.83173E-01
13	732.000	6.75544E-01	5.68152E-01	5.12547E-01	4.73563E-01
14	774.000	3.78847E-02	3.73880E-02	3.75595E-02	3.75072E-02
15	835.000	9.16267E-02	9.06383E-02	8.98182E-02	8.91414E-02
16	858.000	1.08475E-02	1.08475E-02	1.08240E-02	1.08102E-02
17	968.000	2.96180E-01	2.56604E-01	2.33838E-01	2.16835E-01
18	1080.000	1.96352E-01	1.75545E-01	1.62369E-01	1.52116E-01
19	1130.000	1.75262E-01	1.60267E-01	1.50273E-01	1.42129E-01
20	1190.000	1.48873E-01	1.33408E-01	1.23684E-01	1.16076E-01
21	1420.000	1.34783E-01	1.28659E-01	1.24210E-01	1.20394E-01
22	1510.000	1.15911E-01	1.04749E-01	9.78411E-02	9.23647E-02
23	1550.000	7.37842E-03	7.37842E-03	7.36075E-03	7.35690E-03
24	1800.000	4.99337E-02	4.91324E-02	4.85080E-02	4.79466E-02
25	1940.000	5.90324E-02	5.58219E-02	5.35880E-02	5.16803E-02
26	2040.000	5.66327E-02	5.42587E-02	5.25410E-02	5.10644E-02
27	2120.000	3.80480E-02	3.75171E-02	3.70926E-02	3.67179E-02

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DOPPLER BROADENED (300°K) CAPTURE RESONANCE INTEGRALS BY RESONANCE

20. TUNGSTEN 186 (continued)

ES NO	RES ENERGY	DILUTE	L=0.04000 CM	L=0.05000 CM	L=0.06000 CM
1	18.800	5.13524E 02	1.31850E 02	1.19839E 02	1.10698E 02
2	111.300	1.32535E-02	1.31902E-02	1.32040E-02	1.32162E-02
3	171.500	2.77208E 00	2.02280E 00	1.91074E 00	1.81385E 00
4	197.600	6.25720E-02	6.19297E-02	6.17919E-02	6.16777E-02
5	218.000	4.79670E 00	2.23235E 00	2.07759E 00	1.95910E 00
6	245.000	1.36448E-02	1.35999E-02	1.35980E-02	1.35912E-02
7	288.000	9.38695E-01	7.91487E-01	7.65398E-01	7.41583E-01
8	407.000	8.41498E-01	6.50162E-01	6.19564E-01	5.92522E-01
9	458.000	1.54858E-02	1.54162E-02	1.54141E-02	1.53994E-02
10	512.000	4.37698E-01	3.65565E-01	3.52800E-01	3.41109E-01
11	543.000	8.01207E-01	4.90075E-01	4.57358E-01	4.30827E-01
12	666.000	7.06895E-01	4.48485E-01	4.20746E-01	3.98109E-01
13	732.000	6.75544E-01	4.44326E-01	4.21066E-01	4.02149E-01
14	774.000	3.78847E-02	3.73844E-02	3.72596E-02	3.71764E-02
15	835.000	9.16267E-02	8.84828E-02	8.78616E-02	8.72799E-02
16	858.000	1.08475E-02	1.08029E-02	1.07944E-02	1.07871E-02
17	968.000	2.96180E-01	2.03460E-01	1.92512E-01	1.83321E-01
18	1080.000	1.96352E-01	1.43708E-01	1.36595E-01	1.30471E-01
19	1130.000	1.75262E-01	1.35264E-01	1.29301E-01	1.24087E-01
20	1190.000	1.48873E-01	1.09844E-01	1.04577E-01	1.00025E-01
21	1420.000	1.34783E-01	1.16951E-01	1.13780E-01	1.10896E-01
22	1510.000	1.15911E-01	8.78403E-02	8.40070E-02	8.06930E-02
23	1550.000	7.37842E-03	7.34601E-03	7.34290E-03	7.34189E-03
24	1800.000	4.99337E-02	4.74210E-02	4.69247E-02	4.64466E-02
25	1940.000	5.90324E-02	5.00184E-02	4.85091E-02	4.71404E-02
26	2040.000	5.66327E-02	4.97299E-02	4.85142E-02	4.74057E-02
27	2120.000	3.80480E-02	3.63664E-02	3.60330E-02	3.57161E-02

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DOPPLER BROADENED (300°K) CAPTURE RESONANCE INTEGRALS BY RESONANCE

20. TUNGSTEN 186 (continued)

RES NO	RES ENERGY	DILUTE	L=0.02500 CM	L=0.05000 CM	L=0.07500 CM
1	18.800	5.13524E 02	1.59890E 02	1.19839E 02	1.00282E 02
2	111.300	1.32535E-02	1.32535E-02	1.32040E-02	1.32085E-02
3	171.500	2.77208E 00	2.22658E 00	1.91074E 00	1.69060E 00
4	197.600	6.25720E-02	6.21342E-02	6.17919E-02	6.15196E-02
5	218.000	4.79670E 00	2.58594E 00	2.07759E 00	1.82386E 00
6	245.000	1.36448E-02	1.36448E-02	1.35980E-02	1.35832E-02
7	288.000	9.38695E-01	8.35629E-01	7.65398E-01	7.09166E-01
8	407.000	8.41498E-01	7.04245E-01	6.19564E-01	5.57346E-01
9	458.000	1.54858E-02	1.54327E-02	1.54141E-02	1.53842E-02
10	512.000	4.37698E-01	3.87236E-01	3.52800E-01	3.25438E-01
11	543.000	8.01207E-01	5.56404E-01	4.57358E-01	3.99328E-01
12	666.000	7.06895E-01	5.04102E-01	4.20746E-01	3.70821E-01
13	732.000	6.75544E-01	4.91479E-01	4.21066E-01	3.79484E-01
14	774.000	3.78847E-02	3.76004E-02	3.72596E-02	3.70482E-02
15	835.000	9.16267E-02	8.94828E-02	8.78616E-02	8.64441E-02
16	858.000	1.08475E-02	1.08194E-02	1.07944E-02	1.07798E-02
17	968.000	2.96180E-01	2.24776E-01	1.92512E-01	1.71992E-01
18	1080.000	1.96352E-01	1.56951E-01	1.36595E-01	1.22723E-01
19	1130.000	1.75262E-01	1.46015E-01	1.29301E-01	1.17362E-01
20	1190.000	1.48873E-01	1.19670E-01	1.04577E-01	9.42555E-02
21	1420.000	1.34783E-01	1.22246E-01	1.13780E-01	1.07051E-01
22	1510.000	1.15911E-01	9.49683E-02	8.40070E-02	7.64543E-02
23	1550.000	7.37842E-03	7.35760E-03	7.34290E-03	7.33894E-03
24	1800.000	4.99337E-02	4.82220E-02	4.69247E-02	4.57568E-02
25	1940.000	5.90324E-02	5.25997E-02	4.85091E-02	4.53105E-02
26	2040.000	5.66327E-02	5.17794E-02	4.85142E-02	4.58886E-02
27	2120.000	3.80480E-02	3.69018E-02	3.60330E-02	3.52555E-02

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DOPPLER BROADENED (300°K) CAPTURE RESONANCE INTEGRALS BY RESONANCE

21. RHENIUM 187

RES NO	RES ENERGY	DILUTE	L=0.00500 CM	L=0.01000 CM	L=0.01500 CM
1	4.410	3.98197E 01	3.29420E 01	2.89671E 01	2.60829E 01
2	11.140	3.42283E 01	2.63648E 01	2.23024E 01	1.94823E 01
3	16.100	5.64029E 00	5.22852E 00	4.94152E 00	4.71184E 00
4	17.600	1.36436E 01	1.10289E 01	1.02876E 01	9.35155E 00
5	18.600	4.33959E 00	4.05401E 00	3.86434E 00	3.70063E 00
6	24.900	4.29517E-01	4.24971E-01	4.20830E-01	4.17590E-01
7	32.200	1.61998E 01	1.22521E 01	1.01880E 01	8.81951E 00
8	34.100	2.02684E 00	1.92877E 00	1.85354E 00	1.78865E 00
9	39.500	1.43947E 01	1.06820E 01	8.78704E 00	7.56444E 00
10	47.500	4.93668E 00	4.34595E 00	3.95022E 00	3.63831E 00
11	53.900	2.50929E 00	2.32321E 00	2.19535E 00	2.08729E 00
12	61.500	8.48657E 00	6.57536E 00	5.53173E 00	4.82503E 00

22. INDIUM 191

RES NO	RES ENERGY	DILUTE	L=0.01000 CM	L=0.02000 CM	L=0.03000 CM
1	0.654	2.98030E 03	1.28056E 03	9.41458E 02	7.77846E 02
2	5.360	4.07942E 02	2.00346E 02	1.49103E 02	1.23111E 02
3	6.130	2.90738E 01	2.49986E 01	2.25251E 01	2.06689E 01
4	9.070	1.04542E 02	6.71729E 01	5.42084E 01	4.47361E 01
5	9.900	1.22780E 01	1.11563E 01	1.04404E 01	9.85825E 00
6	10.400	6.24141E 00	5.88403E 00	5.65569E 00	5.45743E 00
7	19.300	1.65014E 01	1.37756E 01	1.22668E 01	1.11175E 01
8	20.300	8.78752E 00	7.87278E 00	7.28075E 00	6.80989E 00
9	21.200	4.10772E-01	4.10772E-01	4.05084E-01	4.02194E-01
10	25.300	5.06736E 01	3.16561E 01	2.46965E 01	2.07864E 01
11	30.000	3.72659E 01	2.49704E 01	1.99497E 01	1.69767E 01
12	31.800	7.01970E 00	6.24654E 00	5.73789E 00	5.33287E 00
13	36.600	5.15770E 00	4.68352E 00	4.35190E 00	4.08658E 00
14	40.600	6.88308E 00	6.04217E 00	5.49992E 00	5.02913E 00
15	51.300	2.18674E 01	1.45306E 01	1.16832E 01	1.00285E 01

23. PLATINUM 198

RES NO	RES ENERGY	DILUTE	L=0.05000 CM	L=0.10000 CM	L=0.15000 CM
1	96.000	3.79699E 01	2.15319E 01	1.76119E 01	1.55184E 01
2	260.500	5.27295E 00	4.24926E 00	3.72228E 00	3.36166E 00
3	307.800	2.26689E 00	1.73082E 00	1.47524E 00	1.31043E 00

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DOPPLER BROADENED (300°K) CAPTURE RESONANCE INTEGRALS BY RESONANCE

24. GOLD 197

RES NO	RES ENERGY	DILUTE	L=0.00100 CM	L=0.00200 CM	L=0.00300 CM
1	4.906	1.47773E 03	8.99784E 02	7.03502E 02	5.93964E 02
2	46.500	9.96145E-02	9.96145E-02	9.96145E-02	9.96145E-02
3	58.000	2.00299E 00	2.00299E 00	2.00299E 00	2.00299E 00
4	60.200	3.25447E 01	2.77004E 01	2.49069E 01	2.28233E 01
5	78.400	3.71416E 00	3.60817E 00	3.52225E 00	3.44755E 00
6	107.000	1.62580E 00	1.46850E 00	1.49799E 00	1.62580E 00
7	122.200	1.54046E-01	1.54046E-01	1.53362E-01	1.54046E-01
8	144.300	6.00440E-01	6.00440E-01	6.00440E-01	6.00440E-01
9	151.300	2.14005E 00	2.08004E 00	2.03786E 00	1.99990E 00
10	163.000	2.15511E 00	2.08691E 00	2.03694E 00	1.99233E 00
11	165.000	8.14047E-01	8.14047E-01	8.00184E-01	7.91090E-01
12	190.000	1.41550E 00	1.38315E 00	1.36071E 00	1.34092E 00
13	209.300	3.35168E-02	3.34925E-02	3.35168E-02	3.35168E-02
14	240.500	2.03396E 00	1.95432E 00	1.89638E 00	1.84630E 00
15	255.800	1.87206E-02	1.87206E-02	1.87206E-02	1.87206E-02
16	262.200	1.48052E 00	1.42551E 00	1.38550E 00	1.35095E 00
17	273.900	1.34901E-01	1.34901E-01	1.34901E-01	1.34901E-01
18	293.400	3.14729E 00	2.89260E 00	2.72706E 00	2.59377E 00
19	329.800	8.08125E-01	7.92669E-01	7.80489E-01	7.69772E-01
20	331.400	6.57396E-01	6.45959E-01	6.36856E-01	6.29049E-01
21	355.600	5.93658E-01	5.84747E-01	5.78355E-01	5.72259E-01
22	371.300	8.77128E-01	8.52814E-01	8.34625E-01	8.18482E-01
23	375.600	1.40554E-01	1.40554E-01	1.39782E-01	1.40554E-01
24	382.300	6.87867E-01	6.73008E-01	6.61952E-01	6.51955E-01
25	400.000	2.85382E-01	2.80074E-01	2.82692E-01	2.79375E-01
26	440.400	7.37586E-01	7.13044E-01	6.95300E-01	6.79620E-01
27	451.300	5.24253E-01	5.14773E-01	5.07608E-01	5.01206E-01
28	477.600	1.12888E 00	1.07613E 00	1.03877E 00	1.00725E 00
29	490.900	2.62359E-01	2.59800E-01	2.57808E-01	2.55952E-01
30	494.900	1.66589E-01	1.66589E-01	1.66589E-01	1.64808E-01
31	535.100	2.26276E-01	2.24918E-01	2.23126E-01	2.21778E-01
32	548.800	1.85054E-01	1.83743E-01	1.82475E-01	1.81511E-01
33	563.200	2.16139E-02	2.16139E-02	2.16139E-02	2.16139E-02
34	579.000	8.17188E-01	7.81792E-01	7.56787E-01	7.35299E-01
35	580.800	2.92806E-01	2.88192E-01	2.84496E-01	2.81335E-01
36	588.400	6.00075E-02	6.00075E-02	6.00075E-02	6.00075E-02
37	604.400	6.16280E-01	5.98052E-01	5.84511E-01	5.72394E-01
38	619.100	3.33168E-01	3.28913E-01	3.25568E-01	3.22533E-01
39	626.300	1.63090E-01	1.61864E-01	1.60961E-01	1.60145E-01
40	630.100	1.97754E-01	1.96084E-01	1.94980E-01	1.93837E-01
41	641.400	7.01914E-01	6.71740E-01	6.50328E-01	6.31897E-01
42	661.400	2.40911E-02	2.40911E-02	2.40911E-02	2.40911E-02
43	688.500	3.94117E-02	3.94117E-02	3.93157E-02	3.94117E-02
44	698.500	4.17288E-01	4.05042E-01	3.95422E-01	3.87274E-01
45	702.500	6.26404E-01	5.96913E-01	5.75455E-01	5.57778E-01
46	718.300	2.95645E-01	2.91464E-01	2.88249E-01	2.85290E-01
47	740.700	3.56796E-02	3.56796E-02	3.56796E-02	3.56796E-02
48	763.000	2.99222E-01	2.92284E-01	2.87067E-01	2.82628E-01
49	777.400	2.53658E-01	2.47503E-01	2.42827E-01	2.38892E-01
50	787.700	2.69660E-01	2.66034E-01	2.63209E-01	2.60668E-01

TABLE A-IX (Page 48)

DOPPLER BROADENED (300°K) CAPTURE RESONANCE INTEGRALS BY RESONANCE

24. GOLD 197 (continued)

RES NO	RES ENERGY	DILUTE	L=0.00100 CM	L=0.00200 CM	L=0.00300 CM
51	799.500	3.23480E-01	3.17419E-01	3.12630E-01	3.08533E-01
52	816.300	4.40272E-02	4.40272E-02	4.40272E-02	4.40272E-02
53	822.300	3.44639E-01	3.37016E-01	3.31095E-01	3.25982E-01
54	828.000	4.71720E-01	4.54847E-01	4.42540E-01	4.31818E-01
55	867.600	4.69111E-02	4.69111E-02	4.69111E-02	4.69111E-02
56	882.800	8.56476E-02	8.51805E-02	8.48065E-02	8.44764E-02
57	936.200	2.91051E-01	2.82762E-01	2.76512E-01	2.71085E-01
58	956.100	1.57091E-02	1.56960E-02	1.57091E-02	1.57091E-02
59	961.200	1.05785E-01	1.05119E-01	1.04453E-01	1.03917E-01
60	984.200	2.73007E-01	2.66743E-01	2.61898E-01	2.57734E-01
61	988.500	1.85685E-01	1.83632E-01	1.82036E-01	1.80602E-01
62	995.400	2.98911E-01	2.90157E-01	2.83726E-01	2.78138E-01

RES NO	RES ENERGY	DILUTE	L=0.00400 CM	L=0.00500 CM	L=0.00600 CM
1	4.906	1.47773E 03	5.22542E 02	4.71691E 02	4.32991E 02
2	46.500	9.96145E-02	9.96145E-02	9.96145E-02	9.96145E-02
3	58.000	2.00299E 00	2.00299E 00	1.87099E 00	1.88615E 00
4	60.200	3.25447E 01	2.11762E 01	1.98331E 01	1.87064E 01
5	78.400	3.71416E 00	3.38306E 00	3.32307E 00	3.26671E 00
6	107.000	1.62580E 00	1.52610E 00	1.47817E 00	1.48926E 00
7	122.200	1.54046E-01	1.54046E-01	1.54046E-01	1.51644E-01
8	144.300	6.00440E-01	6.00440E-01	6.00440E-01	4.90660E-01
9	151.300	2.14005E 00	1.96485E 00	1.93202E 00	1.90094E 00
10	163.000	2.15511E 00	1.95334E 00	1.91629E 00	1.88158E 00
11	165.000	8.14047E-01	7.82182E-01	7.77455E-01	7.71344E-01
12	190.000	1.41550E 00	1.32149E 00	1.30410E 00	1.28794E 00
13	209.300	3.35168E-02	3.35168E-02	3.35168E-02	3.35168E-02
14	240.500	2.03396E 00	1.80038E 00	1.75875E 00	1.72136E 00
15	255.800	1.87206E-02	1.87206E-02	1.87206E-02	1.87206E-02
16	262.200	1.48052E 00	1.32001E 00	1.29117E 00	1.26445E 00
17	273.900	1.34901E-01	1.34901E-01	1.34901E-01	1.34901E-01
18	293.400	3.14729E 00	2.47990E 00	2.38126E 00	2.29455E 00
19	329.800	8.08125E-01	7.59896E-01	7.50612E-01	7.41818E-01
20	331.400	6.57396E-01	6.21829E-01	6.14999E-01	6.08550E-01
21	355.600	5.93658E-01	5.66438E-01	5.61203E-01	5.56185E-01
22	371.300	8.77128E-01	8.03701E-01	7.89929E-01	7.76873E-01
23	375.600	1.40554E-01	1.40554E-01	1.40554E-01	1.35600E-01
24	382.300	6.87867E-01	6.42649E-01	6.34001E-01	6.25819E-01
25	400.000	2.85382E-01	2.78662E-01	2.77002E-01	2.75233E-01
26	440.400	7.37586E-01	6.65795E-01	6.53081E-01	6.41113E-01
27	451.300	5.24253E-01	4.95187E-01	4.89535E-01	4.84187E-01
28	477.600	1.12888E 00	9.78875E-01	9.53082E-01	9.29477E-01
29	490.900	2.62359E-01	2.54322E-01	2.52771E-01	2.51253E-01
30	494.900	1.66589E-01	1.64273E-01	1.63372E-01	1.62262E-01
31	535.100	2.26276E-01	2.20659E-01	2.19449E-01	2.18453E-01
32	548.800	1.85054E-01	1.80588E-01	1.79651E-01	1.78777E-01
33	563.200	2.16139E-02	2.16139E-02	2.16139E-02	2.16139E-02
34	579.000	8.17188E-01	7.16226E-01	6.98698E-01	6.82589E-01
35	580.800	2.92806E-01	2.78388E-01	2.75590E-01	2.72952E-01

TABLE A-IX (Page 49)

DOPPLER BROADENED (300°K) CAPTURE RESONANCE INTEGRALS BY RESONANCE

24. GOLD 197 (continued)

RES NO	RES ENERGY	DILUTE	L=0.00400 CM	L=0.00500 CM	L=0.00600 CM
36	588.400	6.00075E-02	5.68361E-02	6.00075E-02	6.00075E-02
37	604.400	6.16280E-01	5.61897E-01	5.51967E-01	5.42553E-01
38	619.100	3.33168E-01	3.19748E-01	3.17087E-01	3.14568E-01
39	626.300	1.63090E-01	1.59363E-01	1.58623E-01	1.57905E-01
40	630.100	1.97754E-01	1.92756E-01	1.91776E-01	1.90804E-01
41	641.400	7.01914E-01	6.15733E-01	6.00897E-01	5.87237E-01
42	661.400	2.40911E-02	2.40911E-02	2.40911E-02	2.40911E-02
43	688.500	3.94117E-02	3.94117E-02	3.94117E-02	3.94117E-02
44	698.500	4.17288E-01	3.79958E-01	3.73361E-01	3.67316E-01
45	702.500	6.26404E-01	5.42457E-01	5.28664E-01	5.15998E-01
46	718.300	2.95645E-01	2.82589E-01	2.80034E-01	2.77596E-01
47	740.700	3.56796E-02	3.56796E-02	3.54494E-02	3.53975E-02
48	763.000	2.99222E-01	2.78477E-01	2.74581E-01	2.71008E-01
49	777.400	2.53658E-01	2.35185E-01	2.31754E-01	2.28608E-01
50	787.700	2.69660E-01	2.58294E-01	2.56080E-01	2.53949E-01
51	799.500	3.23480E-01	3.04722E-01	3.01139E-01	2.97743E-01
52	816.300	4.40272E-02	4.40272E-02	4.34023E-02	4.35308E-02
53	822.300	3.44639E-01	3.21227E-01	3.16916E-01	3.12802E-01
54	828.000	4.71720E-01	4.22408E-01	4.13814E-01	4.05798E-01
55	867.600	4.69111E-02	4.69111E-02	4.65119E-02	4.63472E-02
56	882.800	8.56476E-02	8.41561E-02	8.38487E-02	8.35694E-02
57	936.200	2.91051E-01	2.66191E-01	2.61751E-01	2.57525E-01
58	956.100	1.57091E-02	1.57091E-02	1.57091E-02	1.57091E-02
59	961.200	1.05785E-01	1.03440E-01	1.02980E-01	1.02549E-01
60	984.200	2.73007E-01	2.53806E-01	2.50292E-01	2.47008E-01
61	988.500	1.85685E-01	1.79253E-01	1.77979E-01	1.76772E-01
62	995.400	2.98911E-01	2.73009E-01	2.68402E-01	2.64041E-01

RES NO	RES ENERGY	DILUTE	L=0.00500 CM	L=0.01000 CM	L=0.01500 CM
1	4.906	1.47773E 03	4.71691E 02	3.38313E 02	2.77585E 02
2	46.500	9.96145E-02	9.96145E-02	9.96145E-02	9.79466E-02
3	58.000	2.00299E 00	1.86993E 00	1.83004E 00	1.75423E 00
4	60.200	3.25447E 01	1.98331E 01	1.55520E 01	1.31971E 01
5	78.400	3.71416E 00	3.32307E 00	3.06964E 00	2.86627E 00
6	107.000	1.62580E 00	1.47817E 00	1.46440E 00	1.41850E 00
7	122.200	1.54046E-01	1.54046E-01	1.52164E-01	1.50683E-01
8	144.300	6.00440E-01	6.00440E-01	5.62932E-01	5.54257E-01
9	151.300	2.14005E 00	1.93202E 00	1.79394E 00	1.67867E 00
10	163.000	2.15511E 00	1.91629E 00	1.76166E 00	1.63833E 00
11	165.000	8.14047E-01	7.77627E-01	7.49517E-01	7.24454E-01
12	190.000	1.41550E 00	1.30410E 00	1.22866E 00	1.16650E 00
13	209.300	3.35168E-02	3.35168E-02	3.31272E-02	3.32737E-02
14	240.500	2.03396E 00	1.75875E 00	1.58548E 00	1.45359E 00
15	255.800	1.87206E-02	1.87206E-02	1.84268E-02	1.87206E-02
16	262.200	1.48052E 00	1.29117E 00	1.17291E 00	1.08307E 00
17	273.900	1.34901E-01	1.34901E-01	1.32249E-01	1.30853E-01
18	293.400	3.14729E 00	2.38126E 00	2.02750E 00	1.79730E 00

TABLE A-IX (Page 50)

DOPPLER BROADENED (300°K) CAPTURE RESONANCE INTEGRALS BY RESONANCE

24. GOLD 197 (continued)

RES NO	RES ENERGY	DILUTE	L=0.00500 CM	L=0.01000 CM	L=0.01500 CM
19	329.800	8.08125E-01	7.50621E-01	7.10443E-01	6.76233E-01
20	331.400	6.57396E-01	6.14999E-01	5.85136E-01	5.60384E-01
21	355.600	5.93658E-01	5.61203E-01	5.37898E-01	5.18044E-01
22	371.300	8.77128E-01	7.89929E-01	7.31149E-01	6.83200E-01
23	375.600	1.40554E-01	1.40554E-01	1.36378E-01	1.35295E-01
24	382.300	6.87867E-01	6.34001E-01	5.96396E-01	5.64187E-01
25	400.000	2.85382E-01	2.77002E-01	2.70582E-01	2.64798E-01
26	440.400	7.37586E-01	6.53081E-01	5.99811E-01	5.58681E-01
27	451.300	5.24253E-01	4.89533E-01	4.64867E-01	4.43643E-01
28	477.600	1.12888E 00	9.53083E-01	8.50950E-01	7.76383E-01
29	490.900	2.62359E-01	2.52771E-01	2.45632E-01	2.39424E-01
30	494.900	1.66589E-01	1.63372E-01	1.60626E-01	1.58050E-01
31	535.100	2.26276E-01	2.19449E-01	2.14450E-01	2.10005E-01
32	548.800	1.85054E-01	1.79651E-01	1.75613E-01	1.72043E-01
33	563.200	2.16139E-02	2.16139E-02	2.16139E-02	2.14078E-02
34	579.000	8.17188E-01	6.98698E-01	6.28582E-01	5.76410E-01
35	580.800	2.92806E-01	2.75590E-01	2.63405E-01	2.52932E-01
36	588.400	6.00075E-02	6.00075E-02	5.38291E-02	6.00075E-02
37	604.400	6.16280E-01	5.51967E-01	5.09659E-01	4.76422E-01
38	619.100	3.33168E-01	3.17087E-01	3.05398E-01	2.95284E-01
39	626.300	1.63090E-01	1.58623E-01	1.55275E-01	1.52309E-01
40	630.100	1.97754E-01	1.91776E-01	1.87330E-01	1.83381E-01
41	641.400	7.01914E-01	6.00897E-01	5.41359E-01	4.97192E-01
42	661.400	2.40911E-02	2.40911E-02	2.40911E-02	2.39073E-02
43	688.500	3.94117E-02	3.94117E-02	3.94117E-02	3.94117E-02
44	698.500	4.17288E-01	3.73361E-01	3.46387E-01	3.25130E-01
45	702.500	6.26404E-01	5.28664E-01	4.73739E-01	4.34031E-01
46	718.300	2.95645E-01	2.80034E-01	2.68739E-01	2.59018E-01
47	740.700	3.56796E-02	3.54494E-02	3.56796E-02	3.56796E-02
48	763.000	2.99222E-01	2.74581E-01	2.58356E-01	2.45079E-01
49	777.400	2.53658E-01	2.31754E-01	2.17438E-01	2.05812E-01
50	787.700	2.69660E-01	2.56080E-01	2.46237E-01	2.37741E-01
51	799.500	3.23480E-01	3.01139E-01	2.85496E-01	2.72392E-01
52	816.300	4.40272E-02	4.34023E-02	4.31971E-02	4.30445E-02
53	822.300	3.44639E-01	3.16916E-01	2.98002E-01	2.82329E-01
54	828.000	4.71720E-01	4.13816E-01	3.78315E-01	3.51293E-01
55	867.600	4.69111E-02	4.65119E-02	4.61509E-02	4.57919E-02
56	882.800	8.56476E-02	8.38487E-02	8.25097E-02	8.12982E-02
57	936.200	2.91051E-01	2.61750E-01	2.42663E-01	2.27476E-01
58	956.100	1.57091E-02	1.57091E-02	1.57091E-02	1.55641E-02
59	961.200	1.05785E-01	1.02980E-01	1.00920E-01	9.90623E-02
60	984.200	2.73007E-01	2.50292E-01	2.35038E-01	2.22456E-01
61	988.500	1.85685E-01	1.77979E-01	1.72323E-01	1.67400E-01
62	995.400	2.98911E-01	2.68402E-01	2.48748E-01	2.33228E-01

TABLE A-IX (Page 51)

DOPPLER BROADENED (300°K) CAPTURE RESONANCE INTEGRALS BY RESONANCE

24. GOLD 197 (continued)

RES NO	RES ENERGY	DILUTE	L=0.02000 CM	L=0.02500 CM	L=0.03000 CM
1	4.906	1.47773E 03	2.40862E 02	2.15646E 02	1.96982E 02
2	46.500	9.96145E-02	9.82789E-02	9.84140E-02	9.79298E-02
3	58.000	2.00299E 00	1.69841E 00	1.65083E 00	1.60381E 00
4	60.200	3.25447E 01	1.16688E 01	1.05784E 01	9.75039E 00
5	78.400	3.71416E 00	2.69594E 00	2.55164E 00	2.42579E 00
6	107.000	1.62580E 00	1.34141E 00	1.27835E 00	1.24610E 00
7	122.200	1.54046E-01	1.49651E-01	1.48935E-01	1.48132E-01
8	144.300	6.00440E-01	5.44246E-01	5.35485E-01	5.25478E-01
9	151.300	2.14005E 00	1.58365E 00	1.50141E 00	1.42905E 00
10	163.000	2.15511E 00	1.53640E 00	1.45035E 00	1.37586E 00
11	165.000	8.14047E-01	7.03098E-01	6.83139E-01	6.64510E-01
12	190.000	1.41550E 00	1.11253E 00	1.06482E 00	1.02264E 00
13	209.300	3.35168E-02	3.30974E-02	3.31301E-02	3.30579E-02
14	240.500	2.03396E 00	1.34668E 00	1.25744E 00	1.18258E 00
15	255.800	1.87206E-02	1.86170E-02	1.85913E-02	1.85819E-02
16	262.200	1.48052E 00	1.00996E 00	9.49040E-01	8.97193E-01
17	273.900	1.34901E-01	1.29485E-01	1.28698E-01	1.27912E-01
18	293.400	3.14729E 00	1.63421E 00	1.51153E 00	1.41560E 00
19	329.800	8.08125E-01	6.46403E-01	6.19909E-01	5.96176E-01
20	331.400	6.57396E-01	5.37995E-01	5.18082E-01	5.00325E-01
21	355.600	5.93658E-01	5.00022E-01	4.83770E-01	4.69011E-01
22	371.300	8.77128E-01	6.42721E-01	6.07882E-01	5.77503E-01
23	375.600	1.40554E-01	1.31049E-01	1.29762E-01	1.40554E-01
24	382.300	6.87867E-01	5.36904E-01	5.12522E-01	4.90689E-01
25	400.000	2.85382E-01	2.59703E-01	2.55037E-01	2.50475E-01
26	440.400	7.37586E-01	5.25347E-01	4.96999E-01	4.72675E-01
27	451.300	5.24253E-01	4.25035E-01	4.08569E-01	3.93511E-01
28	477.600	1.12888E 00	7.17701E-01	6.70085E-01	6.30656E-01
29	490.900	2.62359E-01	2.33779E-01	2.28625E-01	2.23661E-01
30	494.900	1.66589E-01	1.55944E-01	1.53903E-01	1.52009E-01
31	535.100	2.26276E-01	2.05891E-01	2.02142E-01	1.98501E-01
32	548.800	1.85054E-01	1.68762E-01	1.65775E-01	1.62861E-01
33	563.200	2.16139E-02	2.13709E-02	2.13029E-02	2.12850E-02
34	579.000	8.17188E-01	5.35757E-01	5.02084E-01	4.73843E-01
35	580.800	2.92806E-01	2.43737E-01	2.35634E-01	2.28057E-01
36	588.400	6.00075E-02	6.00075E-02	6.00075E-02	5.51879E-02
37	604.400	6.16280E-01	4.48401E-01	4.24645E-01	4.04064E-01
38	619.100	3.33168E-01	2.86297E-01	2.77937E-01	2.70290E-01
39	626.300	1.63090E-01	1.49607E-01	1.47084E-01	1.44758E-01
40	630.100	1.97754E-01	1.79737E-01	1.76394E-01	1.73179E-01
41	641.400	7.01914E-01	4.62757E-01	4.34225E-01	4.10318E-01
42	661.400	2.40911E-02	2.37620E-02	2.37222E-02	2.36198E-02
43	688.500	3.94117E-02	3.84841E-02	3.87783E-02	3.84556E-02
44	698.500	4.17288E-01	3.07773E-01	2.93030E-01	2.80405E-01
45	702.500	6.26404E-01	4.03247E-01	3.78481E-01	3.58340E-01
46	718.300	2.95645E-01	2.50345E-01	2.42406E-01	2.35236E-01
47	740.700	3.56796E-02	3.43193E-02	3.50128E-02	3.46600E-02
48	763.000	2.99222E-01	2.33847E-01	2.24114E-01	2.15508E-01
49	777.400	2.53658E-01	1.96047E-01	1.87600E-01	1.80159E-01
50	787.700	2.69660E-01	2.30224E-01	2.23297E-01	2.16951E-01

TABLE A-IX (Page 52)

DOPPLER BROADENED (300°K) CAPTURE RESONANCE INTEGRALS BY RESONANCE

24. GOLD 197 (continued)

RES NO.	RES ENERGY	DILUTE	L=0.02000 CM	L=0.02500 CM	L=0.03000 CM
51	799.500	3.23480E-01	2.60978E-01	2.50762E-01	2.41644E-01
52	816.300	4.40272E-02	4.28965E-02	4.26466E-02	4.23508E-02
53	822.300	3.44639E-01	2.68969E-01	2.57264E-01	2.46878E-01
54	828.000	4.71720E-01	3.29300E-01	3.11050E-01	2.95858E-01
55	867.600	4.69111E-02	4.55258E-02	4.52507E-02	4.50023E-02
56	882.800	8.56476E-02	8.01819E-02	7.91261E-02	7.81149E-02
57	936.200	2.91051E-01	2.14824E-01	2.04063E-01	1.94908E-01
58	956.100	1.57091E-02	1.55488E-02	1.54793E-02	1.54830E-02
59	961.200	1.05785E-01	9.73757E-02	9.58090E-02	9.43313E-02
60	984.200	2.73007E-01	2.11768E-01	2.02423E-01	1.94359E-01
61	988.500	1.85685E-01	1.62965E-01	1.58913E-01	1.55087E-01
62	995.400	2.98911E-01	2.20380E-01	2.09413E-01	1.99925E-01

RES NO	RES ENERGY	DILUTE	L=0.01000 CM	L=0.02000 CM	L=0.03000 CM
1	4.906	1.47773E 03	3.38313E 02	2.40862E 02	1.96982E 02
2	46.500	9.96145E-02	9.96145E-02	9.82789E-02	9.79298E-02
3	58.000	2.00299E 00	1.83004E 00	1.69841E 00	1.60381E 00
4	60.200	3.25447E 01	1.55520E 01	1.16688E 01	9.75039E 00
5	78.400	3.71416E 00	3.06964E 00	2.69594E 00	2.42579E 00
6	107.000	1.62580E 00	1.46440E 00	1.62580E 00	1.24610E 00
7	122.200	1.54046E-01	1.52164E-01	1.49651E-01	1.48132E-01
8	144.300	6.00440E-01	5.62932E-01	5.44246E-01	5.25478E-01
9	151.300	2.14005E 00	1.79391E 00	1.58366E 00	1.42905E 00
10	163.000	2.15511E 00	1.76166E 00	1.53640E 00	1.37586E 00
11	165.000	8.14047E-01	7.49517E-01	7.03098E-01	6.64510E-01
12	190.000	1.41550E 00	1.22863E 00	1.11253E 00	1.02264E 00
13	209.300	3.35168E-02	3.31272E-02	3.30974E-02	3.30579E-02
14	240.500	2.03396E 00	1.58548E 00	1.34668E 00	1.18258E 00
15	255.800	1.87206E-02	1.84268E-02	1.86170E-02	1.85819E-02
16	262.200	1.48052E 00	1.17291E 00	1.00996E 00	8.97193E-01
17	273.900	1.34901E-01	1.32249E-01	1.29530E-01	1.27912E-01
18	293.400	3.14729E 00	2.02750E 00	1.63421E 00	1.41560E 00
19	329.800	8.08125E-01	7.10443E-01	6.46403E-01	5.96176E-01
20	331.400	6.57396E-01	5.85136E-01	5.37995E-01	5.00325E-01
21	355.600	5.93658E-01	5.37898E-01	5.00022E-01	4.69011E-01
22	371.300	8.77128E-01	7.31149E-01	6.42722E-01	5.77503E-01
23	375.600	1.40554E-01	1.36378E-01	1.31052E-01	1.40554E-01
24	382.300	6.87867E-01	5.96396E-01	5.36904E-01	4.90689E-01
25	400.000	2.85382E-01	2.70582E-01	2.59703E-01	2.50475E-01
26	440.400	7.37586E-01	5.99811E-01	5.25347E-01	4.72675E-01
27	451.300	5.24253E-01	4.64867E-01	4.25035E-01	3.93511E-01
28	477.600	1.12888E 00	8.50950E-01	7.17701E-01	6.30656E-01
29	490.900	2.62359E-01	2.45632E-01	2.33779E-01	2.23661E-01
30	494.900	1.66589E-01	1.60626E-01	1.55947E-01	1.52009E-01
31	535.100	2.26276E-01	2.14450E-01	2.05891E-01	1.98501E-01
32	548.800	1.85054E-01	1.75613E-01	1.68762E-01	1.62861E-01
33	563.200	2.16139E-02	2.16139E-02	2.13709E-02	2.12850E-02
34	579.000	8.17188E-01	6.28582E-01	5.35757E-01	4.73843E-01
35	580.800	2.92806E-01	2.63405E-01	2.43737E-01	2.28057E-01

TABLE A-IX (Page 53)

DOPPLER BROADENED (300°K)CAPTURE RESONANCE INTEGRALS BY RESONANCE

24. GOLD 197 (continued)

RES NO	RES ENERGY	DILUTE	L=0.01000 CM	L=0.02000 CM	L=0.03000 CM
36	588.400	6.00075E-02	5.38291E-02	6.00075E-02	5.51879E-02
37	604.400	6.16280E-01	5.09659E-01	4.48401E-01	4.04064E-01
38	619.100	3.33168E-01	3.05398E-01	2.86297E-01	2.70290E-01
39	626.300	1.63090E-01	1.55275E-01	1.49607E-01	1.44758E-01
40	630.100	1.97754E-01	1.87330E-01	1.79736E-01	1.73179E-01
41	641.400	7.01914E-01	5.41359E-01	4.62757E-01	4.10318E-01
42	661.400	2.40911E-02	2.40911E-02	2.37620E-02	2.36198E-02
43	688.500	3.94117E-02	3.94117E-02	3.84841E-02	3.84556E-02
44	698.500	4.17288E-01	3.46387E-01	3.07773E-01	2.80405E-01
45	702.500	6.26404E-01	4.73739E-01	4.03247E-01	3.58340E-01
46	718.300	2.95645E-01	2.68739E-01	2.50345E-01	2.35236E-01
47	740.700	3.56796E-02	3.56796E-02	3.43193E-02	3.46600E-02
48	763.000	2.99222E-01	2.58356E-01	2.33847E-01	2.15508E-01
49	777.400	2.53658E-01	2.17438E-01	1.96047E-01	1.80159E-01
50	787.700	2.69660E-01	2.46236E-01	2.30224E-01	2.16951E-01
51	799.500	3.23480E-01	2.85496E-01	2.60978E-01	2.41644E-01
52	816.300	4.40272E-02	4.31971E-02	4.28965E-02	4.23508E-02
53	822.300	3.44639E-01	2.98002E-01	2.68969E-01	2.46878E-01
54	828.000	4.71720E-01	3.78315E-01	3.29300E-01	2.95858E-01
55	867.600	4.69111E-02	4.61509E-02	4.55258E-02	4.50023E-02
56	882.800	8.56476E-02	8.25097E-02	8.01819E-02	7.81149E-02
57	936.200	2.91051E-01	2.42663E-01	2.14824E-01	1.94908E-01
58	956.100	1.57091E-02	1.57091E-02	1.55454E-02	1.54830E-02
59	961.200	1.05785E-01	1.00920E-01	9.73761E-02	9.43313E-02
60	984.200	2.73007E-01	2.35038E-01	2.11768E-01	1.94359E-01
61	988.500	1.85685E-01	1.72324E-01	1.62965E-01	1.55087E-01
62	995.400	2.98911E-01	2.48748E-01	2.20380E-01	1.99925E-01

RES NO	RES ENERGY	DILUTE	L=0.04000 CM	L=0.05000 CM	L=0.06000 CM
1	4.906	1.47773E 03	1.70737E 02	1.52771E 02	1.39495E 02
2	46.500	9.96145E-02	9.76990E-02	9.72955E-02	9.69749E-02
3	58.000	2.00299E 00	1.52050E 00	1.44831E 00	1.38528E 00
4	60.200	3.25447E 01	8.55760E 00	7.72494E 00	7.10217E 00
5	78.400	3.71416E 00	2.21632E 00	2.04883E 00	1.91197E 00
6	107.000	1.62580E 00	1.17408E 00	1.11149E 00	1.05628E 00
7	122.200	1.54046E-01	1.46684E-01	1.45253E-01	1.43978E-01
8	144.300	6.00440E-01	5.08507E-01	4.92940E-01	4.78646E-01
9	151.300	2.14005E 00	1.30711E 00	1.20980E 00	1.12990E 00
10	163.000	2.15511E 00	1.25275E 00	1.15613E 00	1.07787E 00
11	165.000	8.14047E-01	6.32540E-01	6.04927E-01	5.53325E-01
12	190.000	1.41550E 00	9.50799E-01	8.90966E-01	8.39990E-01
13	209.300	3.35168E-02	3.29542E-02	3.28472E-02	3.27288E-02
14	240.500	2.03396E 00	1.06381E 00	9.72869E-01	9.01103E-01
15	255.800	1.87206E-02	1.85292E-02	1.84779E-02	1.84313E-02
16	262.200	1.48052E 00	8.13836E-01	7.49721E-01	6.98469E-01
17	273.900	1.34901E-01	1.25946E-01	1.24329E-01	1.22793E-01
18	293.400	3.14729E 00	1.27355E 00	1.17213E 00	1.09511E 00

TABLE A-IX (Page 54)

DOPPLER BROADENED (300°K) CAPTURE RESONANCE INTEGRALS BY RESONANCE

24. GOLD 197 (continued)

RES NO	RES ENERGY	DILUTE	L=0.04000 CM	L=0.05000 CM	L=0.06000 CM
19	329.800	8.08125E-01	5.54885E-01	5.20320E-01	4.90851E-01
20	331.400	6.57396E-01	4.69180E-01	4.42726E-01	4.19824E-01
21	355.600	5.93658E-01	4.42827E-01	4.20044E-01	4.00118E-01
22	371.300	8.77128E-01	5.27047E-01	4.86835E-01	4.54177E-01
23	375.600	1.40554E-01	1.40554E-01	1.26294E-01	1.24671E-01
24	382.300	6.87867E-01	4.53421E-01	4.22738E-01	3.97049E-01
25	400.000	2.85382E-01	2.42023E-01	2.34445E-01	2.27674E-01
26	440.400	7.37586E-01	4.32929E-01	4.01717E-01	3.76565E-01
27	451.300	5.24253E-01	3.67146E-01	3.44991E-01	3.26031E-01
28	477.600	1.12888E 00	5.68969E-01	5.22904E-01	4.86895E-01
29	490.900	2.62359E-01	2.14716E-01	2.06890E-01	1.99715E-01
30	494.900	1.66589E-01	1.48505E-01	1.45006E-01	1.41964E-01
31	535.100	2.26276E-01	1.91768E-01	1.85763E-01	1.80258E-01
32	548.800	1.85054E-01	1.57479E-01	1.52638E-01	1.48239E-01
33	563.200	2.16139E-02	2.11910E-02	2.11073E-02	2.10344E-02
34	579.000	8.17188E-01	4.29363E-01	3.95626E-01	3.69217E-01
35	580.800	2.92806E-01	2.14782E-01	2.03474E-01	1.93632E-01
36	588.400	6.00075E-02	5.69483E-02	5.65072E-02	5.58943E-02
37	604.400	6.16280E-01	3.69849E-01	3.42786E-01	3.20664E-01
38	619.100	3.33168E-01	2.56772E-01	2.44860E-01	2.34265E-01
39	626.300	1.63090E-01	1.40273E-01	1.36204E-01	1.32561E-01
40	630.100	1.97754E-01	1.67250E-01	1.61926E-01	1.57032E-01
41	641.400	7.01914E-01	3.72563E-01	3.43897E-01	3.21451E-01
42	661.400	2.40911E-02	2.35305E-02	2.34168E-02	2.33197E-02
43	688.500	3.94117E-02	3.79319E-02	3.76470E-02	3.73713E-02
44	698.500	4.17288E-01	2.59526E-01	2.43121E-01	2.29598E-01
45	702.500	6.26404E-01	3.26359E-01	3.02457E-01	2.83780E-01
46	718.300	2.95645E-01	2.22454E-01	2.11296E-01	2.01509E-01
47	740.700	3.56796E-02	3.43541E-02	3.41642E-02	3.39212E-02
48	763.000	2.99222E-01	2.01069E-01	1.89095E-01	1.79007E-01
49	777.400	2.53658E-01	1.67637E-01	1.57525E-01	1.48975E-01
50	787.700	2.69660E-01	2.05704E-01	1.95872E-01	1.87175E-01
51	799.500	3.23480E-01	2.25801E-01	2.12397E-01	2.00971E-01
52	816.300	4.40272E-02	4.19310E-02	4.14976E-02	4.12936E-02
53	822.300	3.44639E-01	2.29145E-01	2.14442E-01	2.02100E-01
54	828.000	4.71720E-01	2.70646E-01	2.51087E-01	2.35473E-01
55	867.600	4.69111E-02	4.44978E-02	4.40338E-02	4.35995E-02
56	882.800	8.56476E-02	7.62626E-02	7.45680E-02	7.29509E-02
57	936.200	2.91051E-01	1.79396E-01	1.66992E-01	1.56841E-01
58	956.100	1.57091E-02	1.54120E-02	1.53510E-02	1.52938E-02
59	961.200	1.05785E-01	9.15969E-02	8.90555E-02	8.67467E-02
60	984.200	2.73007E-01	1.80426E-01	1.68918E-01	1.59282E-01
61	988.500	1.85685E-01	1.48266E-01	1.42257E-01	1.36835E-01
62	995.400	2.98911E-01	1.84411E-01	1.71824E-01	1.61543E-01

Part B

Recommended Resolved and Statistical Resonance Parameters for Twenty Four Isotopes

The recommended resolved resonance parameters for the different isotopes used in the calculations are listed in Table B-I. With the exception of Na^{23}, Mo^{98} and Mo^{100} whose resonance parameters were evaluated in Ref. /13/ and of the six heaviest isotopes Sm^{152}, W^{186}, Re^{187}, Ir^{191}, Pt^{198}, and Au^{197} the main sources of information on resolved resonance parameters were the values recommended in the Supplements to BNL-325 edited recently /14/. In addition as far as possible more recent information was included in the evaluation. We note in particular:

V^{51}

All measured and analysed resonances are s-wave. Below 20 keV the J assignments and the Γ_n were taken from Ref. /14/. Between 20 and 160 keV, where most of the authors listed in BNL-325 give only resonance energies, we relied almost completely on the recent comprehensive work of Rohr et al. /15/. These authors analysed their high resolution σ_T measurements in this energy range for the large s-wave resonances in terms of Γ_n and J. For the resonances at 21.6; 29.5; 68.4 and 87.6 keV we preferred resonance energy averages of the references listed in BNL-325 and of Rohr et al. which slightly differ from the values recommended in BNL-325. For the rest of the resonance energies there is very good agreement between Rohr's and the BNL-325 values. Individual capture widths have not been measured for V^{51}. Using the wellknown facts that the capture widths do not vary strongly from resonance to resonance,

if many γ-decay possibilities are available to the compound nucleus, and, that the average capture width is a rather smooth function of the atomic weight, we recommend for all V^{51} resonances $\Gamma_\gamma = 0.5 \pm 0.1$ (eV) a value taken from measurements on Mn^{55} /14/.

Mn^{55}

Again all measured and analysed resonances are s-wave. Below 55 keV the Γ_n and J values were taken from Ref. /14/. For the resonances at 25.9; 46.8, and 47.3 keV no J values are given in this reference; from the height of the resonances we estimated for all three resonances J = 2. Above 55 keV up to 208 keV as in the case of V^{51} we relied almost solely on the recent comprehensive work of Rohr et al. /15/ which presents Γ_n and J for the larger s-wave resonances. For the resonances at 64.1; 66.6; 69.5 and 70.1 keV a compromise between the resonance energies and the Γ_n of Rohr and BNL-325 was chosen. For the resonances at 65.5 and 72.7 keV Rohr gives no information; we chose the recommended BNL-325 values. For the capture widths of all resonances we used the value 0.5 $\pm$0.1 (eV) measured by Seidl et al. /16/ for the 337 eV resonance which is in agreement within the error limits with the value 0.6 eV measured by Harris et al. /17/ for the same resonance and with nuclear systematics expectation.

Co^{59}

Most of the resonances are s-wave, from shape and size of the neutron width we assumed 17 of all the resonances to be p-wave; for these resonances we assumed arbitrarily J = 3. Most of the Γ_n and J values were directly taken from Ref. /14/. For the lower p-wave resonances we took measured $g\Gamma_n\Gamma_\gamma/\Gamma$ values from the capture cross section work of Moxon /18/ and calculated from these values Γ_n for assumed g and $\Gamma_\gamma = \overline{\Gamma_\gamma}$. For the two resonances at 46.0 and 47.3 keV

we read Γ_n and J values from the cross section curves as measured by Rainwater et al. /19/. For 12 resonances capture widths were available from the work of Moxon /18/. From the 12 capture widths an arithmetic average was calculated and assumed for the rest of the s- and p-wave resonances.

Cu^{63}

All resonances were assumed s-wave with the exception of the very small possible p-wave resonance at 7.24 keV. For the resonances below 13.2 keV the J and Γ_n values were taken from Ref. /14/, for the resonances between 13.2 keV and 42.2 keV the $g\Gamma_n$ values of Ref. /14/ were converted to Γ_n by means of J (and hence g) values estimated from the size of the Cu^{63} resonances. Only for the 577 eV resonance a measured capture width is available from the work of Julien et al. /20/; we assumed this value to hold for all the resonances too.

Ga^{71}

For this isotope only a few resonances are known. The resonance parameters were taken from Ref. /14/, the l assignments were made on the basis of the size of the $g\Gamma_n$ values listed in this reference. For the 95 eV resonance the average capture width calculated from the Γ_γ of the three other resonances was adopted.

As^{75}

The resonances were assigned l = 0 or l = 1 according to the size of Γ_n, the p-wave resonances were arbitrarily assigned J = 1. For most of the resonances the Γ_n, Γ_γ, and J values were directly

taken from Ref. /14/. For resonances above 4 keV J was arbitrarily assumed to be 1, this being the lower one of the two possible s-wave J values. From the measured capture widths the arithmetic average was calculated and adopted for those resonances for which no measurements were available.

Br^{81}

The parameters of only three resonances are known and were taken form Ref. /14/.

Rh^{103}

About two thirds of the resonances are p-wave, only one third is s-wave. The resonance parameters were throughout taken from Ref. /14/. From known capture widths the arithmetic average was computed and adopted for those resonances for which Γ_γ is not known.

Pd^{108}

Only three resonances are known out of which the lowest appears to be p-wave, the two others s-wave. The parameters were fully taken from Ref. /14/.

Cd^{114}

In Ref. /14/ only parameters of the lowest resonance are listed. Neutron widths for five further resonances are available from the work of Adamchuk et al. /21/. All resonances are s-wave; because

of the zero ground state spin J is equal to 1/2 for all resonances. For the five higher resonances the same Γ_γ is recommended as is given in Ref. /14/ for the lowest resonance.

In^{115}

All resonances are s-wave. The Γ_n were taken from Ref. /14/. Where the capture widths are not known an average value of 80 meV was assumed. J is only known for the resonances below 23 eV. For the rest of the resonances J was arbitrarily assumed to be the lower one of the two possible s-wave spin values.

Sb^{121}

All resonances are s-wave. $g\Gamma_n$ and Γ_γ were throughout taken from Ref. /14/. As J is not known for the resonances we converted $g\Gamma_n$ into Γ_n by simply assuming J to be the lower one of the two possible s-wave spin values. For the resonances with unknown Γ_γ an average Γ_γ was computed from the resonances with known Γ_γ.

La^{139}

The partial half widths are only known for the two lowest resonances and were taken from Ref. /14/. Resonance positions without significant loss of individual levels are known up to about 10 keV from the transmission work of Garg et al. /22/.

Sm^{152}

In addition to the parameters of the lowest resonance quoted in Ref. /23/ the positions of only three further resonances are known from transmission measurements of Bowey and Bird /24/.

W^{186}

The resonances were throughout assumed s-wave with J = 1/2, and the parameters were throughout taken from the most comprehensive transmission and capture measurements of Block et al. /25/.

Re^{187}

All resonances were assumed s-wave; g was taken o.5 corresponding to J = 2.5. The neutron widths were obtained by averaging recommended older values from Ref. /23/ and more recent information from Vertebny et al. /26/ and Friesenhahn et al. /27/, an average Γ_γ computed from these measured values was adopted for the resonances with unknown Γ_γ.

Ir^{191}

All resonances were assumed s-wave. Only for the two lowest resonances the spin has been determined, for the other resonances we assumed g = 1/2 corresponding to a J value of 1.5. In addition to the measurements evaluated and quoted in Ref. /23/ only some additional information is available on the three lowest resonances and on the resonances at 30.0 and 51.3 eV /28, 29, 30/. The different neutron widths avaiable for these resonances were averaged, and from the few rather dispersed Γ_γ an average Γ_γ was computed for the resonances with unknown Γ_γ.

Pt^{198}

The resonance parameters are only known for the three lowest l=0 and J=1/2 resonances and were taken from the Ref. /31/ and /32/.

Au^{197}

Most of the resonances are s-wave, the J values of these resonances have been determined experimentally. The p-wave resonances were arbitrarily assigned a J value of 1.0. The most comprehensive resonance parameter information is due to the high resolution transmission and capture work of Julien et al. /33/. Somewhat less information can be drawn from earlier Columbia transmission and self indication measurements /34/ and from more recent capture and scattering measurements et Harwell /35/. In addition Trochon et al. /36/ studied the scattering cross section of Au^{197} in the range of the lowest resonances in order to derive resonance J values. Perfect agreement was noted in the spin assignments of different authors. Good agreement was also stated in the neutron widths of different authors, the arithmetic average for each resonance is recommended. Discrepancies were stated in the capture widths. There is generally rather good agreement between Ashgar and Julien, the values of Ashgar being generally somewhat lower than those of Julien. The capture widths of Desjardins are generally much higher than those of the two other authors. From the more recent better resolved combined capture and transmission work of Julien and Ashgar and its interpretation in terms of Γ_γ we concluded that the capture width distribution is rather narrow with a variance as small that Γ_γ values larger than 200meV are highly improbable. Also so large Γ_γ values would lead to much too high $\langle\sigma_\gamma\rangle$ values at higher energies compared to experiment. Therefore in the evaluation of a capture width for each resonance we disregarded all Γ_γ values of Desjardins being higher than 200 meV. For most of the resonances a capture width could be computed from different experimental values, for 12 resonances out of 62 the average capture width of 138 meV computed from the evaluated individual Γ_γ had to be adopted.

The statistical resonance parameters contained in Table B-II were evaluated in the following way.

s-Wave Strength Function

For the odd nuclei V^{51}, Mn^{55}, Co^{59}, Cu^{63}, As^{75} and Au^{197} the s-wave strength function S_o could be determined for both s-wave spin states from the resolved resonance parameters discussed above. For most of the remaining odd nuclei S_o was calculated from the resolved resonance parameters according to

$$S_o = \frac{\overline{\Gamma_n(o)}}{2\,\bar{D}_{observed}}$$

by taking $g_J = 1/2$. For the even nuclei only one s-wave spin state is available, for most of them $S_o^{J=1/2}$ could be calculated from the resolved resonance parameters. For Pd^{108}, La^{139} and Sm^{152} the Γ_n of two few resonances are known in order to derive S_o. For these isotopes we relied on predictions with the collective optical model due to Buck and Perey (37) (Pd^{108}, Sm^{152}) and for La^{139}, as the collective optical model in the neighbourhood of A = 140 gives systematically much too large values compared to experiment, on S_o systematics from experimental data in the neighbourhood of La^{139}.

Average s-Wave Level Spacings

The basis for calculation of the average level spacings was throughout formed by the experimental resonance positions. As many resonances were considered as were compatible with a linear slope of the histogram level position versus level number. For the even nuclei one has

$$\bar{D}^{l=0}_{J=1/2} = \bar{D}^{l=0}_{observed}$$

For the odd nuclei $\bar{D}_J^{l=0}$ for the two s-wave spin states was calculated from

$$\frac{1}{\bar{D}^{l=0}_{observed}} = \sum_J \frac{1}{\bar{D}_J^{l=0}}$$

and from the Fermi gas model expression

$$\bar{D}_J = \frac{const.}{2\ J+1}\ e^{J(J+1)/2\sigma^2}$$

with the spin cut-off factor σ taken as 4 from an evaluation of Harvey (38) and $\bar{D}^{l=0}_{observed}$ computed from the resolved resonance positions.

Average s-Wave Reduced Neutron Widths And Γ_γ

The average s-wave reduced neutron widths $\bar{\Gamma}^{(o)}_{nJ}$ were throughout simply calculated according to

$$\overline{\Gamma^{(o)}_{nJ,l=0}} = S_o^J \cdot \bar{D}_J^{l=0}.$$

The average capture widths with the exception of V^{51} were calculated from resolved resonance information and were assumed the same regardless of l and J.

p-Wave Strength Function

The resolved p-wave resonance parameter information was generally considered insufficient for an evaluation of the p-wave strength function S_1. We therefore relied solely on the predictions of the collective optical model as due to Buck and Perey (37). Whereas in the range $80 < A < 120$ these predictions are in rather good agreement with those values derived from experiment they are much higher than the Oak Ridge values drawn from interpretation of

$\langle \sigma_\gamma \rangle$ measurements in the range $140 < A < 200$ and thus subject to particularly large errors in this A range.

Scattering Length

For the scattering length needed in the calculation of the potential scattering cross section we used throughout the best available predictions of the energy independent non-local optical model of Perey and Buck (39) which is in qualitative agreement with the rather dispersed experimental values.

Table B-I

RESOLVED RESONANCE PARAMETERS

Table Notes:

The column headings have meanings and units as follows:

E RES.	Resonance energy	eV
GAMMA N	Scattering width	eV
GAMMA G	Capture width	eV
G	Statistical weight	--

TABLE B-I

RESOLVED RESONANCE PARAMETERS

1. SODIUM 23

RES. NO.	E RES.	GAMMA N	GAMMA G	G
1	2.8500E 03	3.8000E 02	2.2000E-01	6.2500E-01
2	3.4000E 04	5.0000E 02	3.0000E-01	5.0000E-01
3	5.4100E 04	7.5000E 02	3.0000E-01	8.7500E-01
4	5.5000E 04	2.0000E 02	3.0000E-01	6.2500E-01
5	6.1500E 04	3.0000E 02	3.0000E-01	1.2500E-01
6	6.3600E 04	4.0000E 02	3.0000E-01	3.7500E-01
7	6.6800E 04	4.0000E 02	3.0000E-01	3.7500E-01
8	7.2500E 04	3.0000E 02	3.0000E-01	6.2500E-01
9	7.5700E 04	5.5000E 02	3.0000E-01	1.2500E-01
10	7.7600E 04	5.0000E 02	3.0000E-01	1.2500E-01
11	7.9900E 04	6.0000E 02	3.0000E-01	1.2500E-01
12	8.1500E 04	7.0000E 02	3.0000E-01	1.2500E-01
13	8.3900E 04	6.5000E 02	3.0000E-01	1.2500E-01
14	8.5300E 04	3.5000E 02	3.0000E-01	1.2500E-01
15	8.6400E 04	3.0000E 02	3.0000E-01	1.2500E-01
16	8.8400E 04	4.0000E 02	3.0000E-01	1.2500E-01
17	9.1300E 04	4.5000E 02	3.0000E-01	3.7500E-01
18	9.3000E 04	5.0000E 02	3.0000E-01	3.7500E-01
19	9.6500E 04	1.0000E 03	3.0000E-01	1.2500E-01
20	9.8600E 04	4.5000E 02	3.0000E-01	3.7500E-01

TABLE B-I (Page 2)

RESOLVED RESONANCE PARAMETERS

2. VANADIUM 51

RES. NO.	E RES.	GAMMA N	GAMMA G	G
1	4.1620E 03	5.1000E 02	5.0000E-01	5.6250E-01
2	6.8400E 03	1.2800E 03	5.0000E-01	4.3750E-01
3	1.1750E 04	5.5000E 03	5.0000E-01	4.3750E-01
4	1.6200E 04	3.5000E 02	5.0000E-01	5.6250E-01
5	1.7000E 04	9.0000E 01	5.0000E-01	5.6250E-01
6	2.1600E 04	8.8000E 02	5.0000E-01	4.3750E-01
7	2.9500E 04	1.9100E 02	5.0000E-01	5.6250E-01
8	3.9300E 04	5.7000E 02	5.0000E-01	4.3750E-01
9	4.8150E 04	1.5000E 02	5.0000E-01	5.6250E-01
10	4.9550E 04	6.3000E 02	5.0000E-01	4.3750E-01
11	5.1950E 04	1.1500E 02	5.0000E-01	5.6250E-01
12	5.3000E 04	9.8000E 02	5.0000E-01	4.3750E-01
13	6.2900E 04	3.8000E 03	5.0000E-01	4.3750E-01
14	6.8400E 04	4.6000E 03	5.0000E-01	5.6250E-01
15	8.3000E 04	1.2000E 03	5.0000E-01	5.6250E-01
16	8.7600E 04	2.7000E 03	5.0000E-01	5.6250E-01
17	1.1080E 05	2.5000E 02	5.0000E-01	4.3750E-01
18	1.1350E 05	1.1000E 02	5.0000E-01	5.6250E-01
19	1.1480E 05	8.0000E 01	5.0000E-01	4.3750E-01
20	1.1660E 05	2.4000E 03	5.0000E-01	5.6250E-01
21	1.1870E 05	2.0500E 04	5.0000E-01	5.6250E-01
22	1.1870E 05	1.3000E 02	5.0000E-01	4.3750E-01
23	1.3470E 05	3.2000E 03	5.0000E-01	5.6250E-01
24	1.4130E 05	3.6000E 03	5.0000E-01	4.3750E-01
25	1.4570E 05	1.5000E 03	5.0000E-01	4.3750E-01
26	1.5290E 05	3.5000E 03	5.0000E-01	5.6250E-01

TABLE B-I (Page 3)

RESOLVED RESONANCE PARAMETERS

3. MANGANESE 55

RES. NO.	E RES.	GAMMA N	GAMMA G	G
1	3.3700E 02	2.2000E 01	5.0000E-01	4.1670E-01
2	1.0980E 03	1.4600E 01	5.0000E-01	5.8330E-01
3	2.3750E 03	4.0000E 02	5.0000E-01	5.8330E-01
4	7.1700E 03	4.2500E 02	5.0000E-01	4.1670E-01
5	8.8700E 03	4.0400E 02	5.0000E-01	5.8330E-01
6	1.7800E 04	1.5000E 01	5.0000E-01	4.1670E-01
7	1.8000E 04	6.5000E 01	5.0000E-01	5.8330E-01
8	2.1000E 04	8.6000E 02	5.0000E-01	5.8330E-01
9	2.3700E 04	3.8000E 02	5.0000E-01	4.1670E-01
10	2.5900E 04	8.4000E 00	5.0000E-01	4.1670E-01
11	2.6400E 04	1.2000E 02	5.0000E-01	4.1670E-01
12	2.7000E 04	3.8000E 02	5.0000E-01	5.8330E-01
13	3.5300E 04	2.5700E 03	5.0000E-01	5.8330E-01
14	4.1000E 04	2.8000E 02	5.0000E-01	5.8330E-01
15	4.3200E 04	2.4000E 00	5.0000E-01	4.1670E-01
16	4.6820E 04	1.2000E 01	5.0000E-01	4.1670E-01
17	4.7300E 04	1.9200E 01	5.0000E-01	4.1670E-01
18	5.3400E 04	8.5000E 01	5.0000E-01	4.1670E-01
19	5.4200E 04	1.2000E 01	5.0000E-01	4.1670E-01
20	5.4400E 04	1.0100E 01	5.0000E-01	4.1670E-01
21	5.7450E 04	8.1000E 02	5.0000E-01	5.8330E-01
22	5.8000E 04	6.0000E 01	5.0000E-01	4.1670E-01
23	5.9500E 04	2.7000E 02	5.0000E-01	5.8330E-01
24	5.9950E 04	1.0000E 02	5.0000E-01	4.1670E-01
25	6.4100E 04	9.0000E 02	5.0000E-01	5.8330E-01
26	6.5510E 04	2.4000E 01	5.0000E-01	4.1670E-01
27	6.6600E 04	1.4000E 02	5.0000E-01	4.1670E-01
28	6.9500E 04	1.5500E 02	5.0000E-01	5.8330E-01
29	7.0070E 04	3.0000E 02	5.0000E-01	4.1670E-01
30	7.2700E 04	1.8000E 01	5.0000E-01	4.1670E-01
31	7.3900E 04	7.1000E 02	5.0000E-01	5.8330E-01
32	8.1300E 04	4.4000E 02	5.0000E-01	4.1670E-01
33	8.4350E 04	1.3100E 03	5.0000E-01	5.8330E-01
34	9.6050E 04	2.1000E 02	5.0000E-01	4.1670E-01
35	9.8200E 04	4.5000E 02	5.0000E-01	5.8330E-01
36	1.0370E 05	2.7000E 02	5.0000E-01	4.1670E-01
37	1.0490E 05	1.5100E 03	5.0000E-01	4.1670E-01
38	1.0700E 05	4.1000E 02	5.0000E-01	4.1670E-01
39	1.0940E 05	1.3200E 03	5.0000E-01	4.1670E-01
40	1.1090E 05	1.8300E 03	5.0000E-01	5.8330E-01
41	1.1610E 05	4.7000E 02	5.0000E-01	5.8330E-01
42	1.1840E 05	7.1000E 02	5.0000E-01	5.8330E-01
43	1.2350E 05	5.1000E 02	5.0000E-01	4.1670E-01
44	1.2700E 05	2.0300E 03	5.0000E-01	5.8330E-01
45	1.2810E 05	1.5100E 03	5.0000E-01	4.1670E-01

TABLE B-I (Page 4)

RESOLVED RESONANCE PARAMETERS

3. MANGANESE 55 (continued)

Res.No.	E RES.	GAMMA N	GAMMA G	G
46	1.2950E 05	1.2100E 03	5.0000E-01	4.1670E-01
47	1.3100E 05	2.2000E 02	5.0000E-01	5.8330E-01
48	1.4210E 05	5.5000E 02	5.0000E-01	5.8330E-01
49	1.5130E 05	4.1000E 02	5.0000E-01	4.1670E-01
50	1.5580E 05	1.0200E 03	5.0000E-01	4.1670E-01
51	1.5870E 05	9.2000E 02	5.0000E-01	5.8330E-01
52	1.6690E 05	3.1000E 02	5.0000E-01	4.1670E-01
53	1.7220E 05	1.7200E 03	5.0000E-01	5.8330E-01
54	1.7690E 05	3.2000E 02	5.0000E-01	5.8330E-01
55	1.7990E 05	3.5000E 02	5.0000E-01	4.1670E-01
56	1.8100E 05	2.5000E 02	5.0000E-01	5.8330E-01
57	1.8440E 05	1.0000E 03	5.0000E-01	4.1670E-01
58	1.8620E 05	2.2000E 03	5.0000E-01	5.8330E-01
59	1.8850E 05	8.1000E 02	5.0000E-01	5.8330E-01
60	1.9390E 05	3.0000E 02	5.0000E-01	5.8330E-01
61	1.9760E 05	6.2000E 02	5.0000E-01	4.1670E-01

4. COBALT 59

RES. NO.	E RES.	GAMMA N	GAMMA G	G
1	1.3200E 02	5.1200E 00	4.5000E-01	5.6250E-01
2	1.3800E 03	5.5000E-03	5.3000E-01	4.3750E-01
3	2.2640E 03	1.2000E-02	5.3000E-01	4.3750E-01
4	2.8600E 03	1.0100E-01	5.3000E-01	4.3750E-01
5	3.9800E 03	4.3000E-02	5.3000E-01	4.3750E-01
6	4.3220E 03	1.1000E 02	5.0000E-01	5.6250E-01
7	5.0150E 03	6.5300E 02	1.0000E 00	4.3750E-01
8	6.3900E 03	2.1700E 00	2.5000E-01	4.3750E-01
9	8.0500E 03	3.8000E 01	3.1000E-01	4.3750E-01
10	8.7400E 03	8.2000E-01	3.7000E-01	4.3750E-01
11	9.7000E 03	2.4000E 00	6.4000E-01	4.3750E-01
12	1.0700E 04	6.5000E 01	6.0000E-01	5.6250E-01
13	1.1850E 04	2.5100E 00	2.9000E-01	4.3750E-01
14	1.3280E 04	2.2000E 01	8.0000E-01	4.3750E-01
15	1.5640E 04	7.5000E 01	5.0000E-01	4.3750E-01
16	1.6920E 04	1.5000E 02	5.0000E-01	5.6250E-01

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RESOLVED RESONANCE PARAMETERS

4. COBALT 59 (continued)

Res. No.	E RES.	GAMMA N	GAMMA G	G
17	1.9750E 04	2.6300E 00	5.3000E-01	4.3750E-01
18	2.1950E 04	7.3000E 02	5.3000E-01	4.3750E-01
19	2.2510E 04	2.5500E 02	5.3000E-01	5.6250E-01
20	2.4460E 04	3.6000E 02	5.3000E-01	4.3750E-01
21	2.5160E 04	1.7500E 02	5.3000E-01	5.6250E-01
22	2.5950E 04	1.5100E 01	5.3000E-01	5.6250E-01
23	2.7350E 04	1.7000E 02	5.3000E-01	5.6250E-01
24	2.9410E 04	1.1400E 01	5.3000E-01	4.3750E-01
25	3.0110E 04	3.2000E 02	5.3000E-01	5.6250E-01
26	3.1360E 04	1.5000E 02	5.3000E-01	4.3750E-01
27	3.1760E 04	9.7000E 00	5.3000E-01	4.3750E-01
28	3.2750E 04	1.3000E 02	5.3000E-01	4.3750E-01
29	3.3050E 04	4.0000E 01	5.3000E-01	5.6250E-01
30	3.4510E 04	5.7000E 00	5.3000E-01	4.3750E-01
31	3.4900E 04	2.5000E 02	5.3000E-01	5.6250E-01
32	3.5420E 04	5.0000E 00	5.3000E-01	4.3750E-01
33	3.6750E 04	2.1700E 01	5.3000E-01	4.3750E-01
34	3.9800E 04	2.9900E 01	5.3000E-01	4.3750E-01
35	4.0500E 04	3.4000E 00	5.3000E-01	4.3750E-01
36	4.1500E 04	3.0200E 01	5.3000E-01	5.6250E-01
37	4.2400E 04	2.3000E 00	5.3000E-01	4.3750E-01
38	4.3700E 04	2.7000E 00	5.3000E-01	4.3750E-01
39	4.5150E 04	2.6700E 02	5.3000E-01	5.6250E-01
40	4.6000E 04	5.0000E 02	5.3000E-01	5.6250E-01
41	4.7300E 04	7.0000E 02	5.3000E-01	4.3750E-01
42	5.0400E 04	1.0000E 02	5.3000E-01	4.3750E-01
43	5.1400E 04	4.8000E 02	5.3000E-01	5.6250E-01
44	5.3000E 04	5.2000E 01	5.3000E-01	5.6250E-01
45	5.3900E 04	5.0000E 02	5.3000E-01	4.3750E-01
46	5.6400E 04	2.1000E 02	5.3000E-01	4.3750E-01
47	5.7800E 04	2.2900E 01	5.3000E-01	4.3750E-01
48	5.9000E 04	3.4000E 02	5.3000E-01	4.3750E-01
49	5.9900E 04	1.0000E 02	5.3000E-01	5.6250E-01
50	6.1200E 04	7.1100E 01	5.3000E-01	5.6250E-01
51	6.2900E 04	5.1400E 01	5.3000E-01	4.3750E-01
52	6.6300E 04	8.5700E 01	5.3000E-01	4.3750E-01
53	7.0400E 04	2.1000E 02	5.3000E-01	5.6250E-01
54	7.1360E 04	5.7100E 01	5.3000E-01	4.3750E-01
55	7.1900E 04	3.6000E 02	5.3000E-01	4.3750E-01
56	7.2500E 04	1.3000E 02	5.3000E-01	5.6250E-01

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RESOLVED RESONANCE PARAMETERS

5. COPPER 63

RES. NO.	E RES.	GAMMA N	GAMMA G	G
1	5.7700E 02	8.6000E-01	5.5000E-01	6.2500E-01
2	2.0100E 03	4.3500E 01	5.5000E-01	3.7500E-01
3	2.6600E 03	4.5000E 00	5.5000E-01	6.2500E-01
4	4.8600E 03	1.4000E 01	5.5000E-01	3.7500E-01
5	5.3900E 03	4.0000E 01	5.5000E-01	6.2500E-01
6	5.8200E 03	1.0400E 01	5.5000E-01	6.2500E-01
7	7.2360E 03	9.9000E-01	5.5000E-01	3.7500E-01
8	7.6400E 03	1.1300E 01	5.5000E-01	3.7500E-01
9	7.9400E 03	8.0000E 01	5.5000E-01	6.2500E-01
10	9.2000E 03	3.6600E 01	5.5000E-01	6.2500E-01
11	9.9300E 03	8.7000E 01	5.5000E-01	3.7500E-01
12	1.0850E 04	5.8000E 01	5.5000E-01	6.2500E-01
13	1.2540E 04	2.3000E 01	5.5000E-01	3.7500E-01
14	1.3170E 04	6.6000E 01	5.5000E-01	6.2500E-01
15	1.3700E 04	6.5700E 01	5.5000E-01	3.7500E-01
16	1.4900E 04	4.6300E 01	5.5000E-01	3.7500E-01
17	1.5600E 04	1.7700E 01	5.5000E-01	6.2500E-01
18	1.6100E 04	1.8400E 01	5.5000E-01	3.7500E-01
19	1.7880E 04	8.0000E 01	5.5000E-01	6.2500E-01
20	1.8120E 04	8.0000E 01	5.5000E-01	6.2500E-01
21	2.1040E 04	1.2000E 02	5.5000E-01	6.2500E-01
22	2.1250E 04	1.2000E 02	5.5000E-01	6.2500E-01
23	2.2820E 04	1.1200E 02	5.5000E-01	6.2500E-01
24	2.4800E 04	6.0400E 01	5.5000E-01	6.2500E-01
25	2.5600E 04	2.7600E 02	5.5000E-01	3.7500E-01
26	2.6500E 04	9.6800E 01	5.5000E-01	6.2500E-01
27	2.8200E 04	6.8600E 01	5.5000E-01	3.7500E-01
28	2.9700E 04	1.9360E 02	5.5000E-01	6.2500E-01
29	3.1200E 04	1.2800E 02	5.5000E-01	3.7500E-01
30	3.3200E 04	2.6000E 02	5.5000E-01	6.2500E-01
31	3.6400E 04	2.4600E 02	5.5000E-01	6.2500E-01
32	4.2200E 04	4.3700E 02	5.5000E-01	6.2500E-01

6. GALLIUM 71

RES. NO.	E RES.	GAMMA N	GAMMA G	G
1	9.5000E 01	9.3000E-02	3.5000E-01	3.7500E-01
2	2.8800E 02	6.5600E 00	3.4000E-01	6.2500E-01
3	3.7700E 02	3.6300E 00	3.7000E-01	3.7500E-01
4	7.0600E 02	4.5000E-01	3.5000E-01	6.5200E-01

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RESOLVED RESONANCE PARAMETERS

7. ARSENIC 75

RES. NO.	E RES.	GAMMA N	GAMMA G	G
1	4.7000E 01	5.9000E-02	2.5600E-01	3.7500E-01
2	9.2400E 01	2.1000E-02	2.4500E-01	3.7500E-01
3	2.5270E 02	7.7000E-02	2.7000E-01	3.7500E-01
4	3.1860E 02	4.7000E-01	3.0000E-01	6.2500E-01
5	3.2670E 02	5.4000E-01	3.4500E-01	3.7500E-01
6	4.5550E 02	4.3000E-02	3.4000E-01	3.7500E-01
7	4.7690E 02	1.4000E-02	3.4000E-01	3.7500E-01
8	4.9330E 02	1.8000E-03	3.0000E-01	3.7500E-01
9	5.3340E 02	2.7000E 00	2.8000E-01	6.2500E-01
10	6.6490E 02	4.5000E-01	2.3000E-01	3.7500E-01
11	7.3330E 02	1.1950E 00	3.5000E-01	3.7500E-01
12	7.3740E 02	1.9550E 00	3.0000E-01	6.2500E-01
13	8.7460E 02	8.0000E-03	3.0000E-01	3.7500E-01
14	8.9550E 02	2.1000E-01	2.8000E-01	3.7500E-01
15	9.2900E 02	9.4500E-01	2.3500E-01	6.2500E-01
16	1.1100E 03	1.8000E-01	3.3000E-01	3.7500E-01
17	1.2990E 03	2.9800E 00	2.7000E-01	3.7500E-01
18	1.3530E 03	7.1000E-01	2.5500E-01	3.7500E-01
19	1.4430E 03	1.3700E 00	2.8000E-01	6.2500E-01
20	1.4793E 03	6.7000E-02	3.0000E-01	3.7500E-01
21	1.6830E 03	3.2000E 00	3.0000E-01	6.2500E-01
22	1.7390E 03	1.7000E-02	3.0000E-01	3.7500E-01
23	1.8070E 03	7.6500E-01	2.3500E-01	3.7500E-01
24	1.8456E 03	2.3000E-02	3.0000E-01	3.7500E-01
25	1.9040E 03	2.9700E 00	2.4000E-01	6.2500E-01
26	2.0211E 03	2.4000E-02	3.0000E-01	3.7500E-01
27	2.0490E 03	4.0000E-01	2.0000E-01	3.7500E-01
28	2.1900E 03	1.5000E-02	3.0000E-01	3.7500E-01
29	2.2320E 03	7.6000E-03	3.0000E-01	3.7500E-01
30	2.2560E 03	2.2000E-02	3.0000E-01	3.7500E-01
31	2.2880E 03	3.2000E-02	3.0000E-01	3.7500E-01
32	2.3300E 03	1.4000E-02	3.0000E-01	3.7500E-01
33	2.3650E 03	1.1700E-01	3.0000E-01	3.7500E-01
34	2.3950E 03	2.3000E-02	3.0000E-01	3.7500E-01
35	2.4030E 03	6.5000E-03	3.0000E-01	3.7500E-01
36	2.4700E 03	2.0000E-02	3.0000E-01	3.7500E-01
37	2.5110E 03	1.4500E 00	2.8000E-01	3.7500E-01
38	2.5770E 03	2.0000E-02	3.0000E-01	3.7500E-01
39	2.6160E 03	2.3500E 00	3.0000E-01	6.2500E-01
40	2.6730E 03	1.5000E-02	3.0000E-01	3.7500E-01
41	2.7330E 03	3.6400E 00	4.0000E-01	6.2500E-01
42	2.8210E 03	3.4500E 00	2.9000E-01	3.7500E-01
43	2.9020E 03	4.0000E-02	3.0000E-01	3.7500E-01
44	2.9390E 03	6.5000E-02	3.0000E-01	3.7500E-01
45	3.0810E 03	7.1000E-02	3.0000E-01	3.7500E-01
46	3.1440E 03	1.6800E 00	2.8000E-01	6.2500E-01
47	3.2270E 03	5.6000E-01	3.0000E-01	3.7500E-01
48	3.3060E 03	2.0000E-02	3.0000E-01	3.7500E-01
49	3.4590E 03	3.0700E 00	3.3000E-01	6.2500E-01
50	3.5050E 03	5.5100E 00	3.0000E-01	6.2500E-01
51	3.7120E 03	4.0800E 00	2.3000E-01	6.2500E-01

TABLE B-I (Page 8)

RESOLVED RESONANCE PARAMETERS

7. ARSENIC 75 (continued)

Res. No.	E RES.	GAMMA N	GAMMA G	G
52	3.7490E 03	1.3000E-01	3.0000E-01	3.7500E-01
53	3.7770E 03	1.5000E-02	3.0000E-01	3.7500E-01
54	3.8220E 03	2.9700E-01	3.0000E-01	3.7500E-01
55	3.8520E 03	2.6700E 00	2.5000E-01	6.2500E-01
56	3.9330E 03	4.5800E 00	3.0000E-01	6.2500E-01
57	3.9980E 03	2.9700E 00	3.0000E-01	3.7500E-01
58	4.0960E 03	5.1000E-02	3.0000E-01	3.7500E-01
59	4.1460E 03	2.2300E-01	3.0000E-01	3.7500E-01
60	4.2530E 03	1.1300E-01	3.0000E-01	3.7500E-01
61	4.2890E 03	4.3700E-01	3.0000E-01	3.7500E-01
62	4.3580E 03	1.0560E 00	3.0000E-01	3.7500E-01
63	4.3780E 03	2.6000E-02	3.0000E-01	3.7500E-01
64	4.4420E 03	8.0000E-02	3.0000E-01	3.7500E-01
65	4.4700E 03	4.8000E-02	3.0000E-01	3.7500E-01
66	4.4880E 03	1.6000E-02	3.0000E-01	3.7500E-01
67	4.5140E 03	1.9700E 00	3.0000E-01	3.7500E-01
68	4.5760E 03	6.8600E-01	3.0000E-01	3.7500E-01
69	4.6690E 03	5.4660E 00	3.0000E-01	3.7500E-01
70	4.7610E 03	4.4140E 00	3.0000E-01	3.7500E-01
71	4.8750E 03	7.4000E-02	3.0000E-01	3.7500E-01
72	4.9050E 03	4.8550E 00	3.0000E-01	3.7500E-01
73	5.0060E 03	5.0900E 00	3.0000E-01	3.7500E-01
74	5.0430E 03	1.9000E-02	3.0000E-01	3.7500E-01
75	5.0900E 03	1.9020E 00	3.0000E-01	3.7500E-01
76	5.1830E 03	4.8000E-02	3.0000E-01	3.7500E-01
77	5.3030E 03	5.8000E-02	3.0000E-01	3.7500E-01
78	5.3240E 03	6.8000E-02	3.0000E-01	3.7500E-01
79	5.3870E 03	2.2510E 00	3.0000E-01	3.7500E-01
80	5.4460E 03	7.8700E-01	3.0000E-01	3.7500E-01
81	5.4660E 03	4.9000E-02	3.0000E-01	3.7500E-01
82	5.5730E 03	1.2336E 01	3.0000E-01	3.7500E-01
83	5.6100E 03	4.9920E 00	3.0000E-01	3.7500E-01
84	5.7090E 03	1.0072E 01	3.0000E-01	3.7500E-01
85	5.7550E 03	3.6400E 00	3.0000E-01	3.7500E-01
86	5.7750E 03	5.1000E-02	3.0000E-01	3.7500E-01
87	5.8630E 03	3.0610E 00	3.0000E-01	3.7500E-01
88	5.9980E 03	1.0945E 01	3.0000E-01	3.7500E-01
89	6.0700E 03	1.0400E-01	3.0000E-01	3.7500E-01
90	6.1780E 03	4.4010E 00	3.0000E-01	3.7500E-01
91	6.2650E 03	6.3000E-02	3.0000E-01	3.7500E-01
92	6.3360E 03	5.3100E-01	3.0000E-01	3.7500E-01
93	6.4230E 03	6.4080E 00	3.0000E-01	3.7500E-01
94	6.4500E 03	6.8510E 00	3.0000E-01	3.7500E-01
95	6.5060E 03	2.2000E-02	3.0000E-01	3.7500E-01
96	6.5490E 03	2.8050E 00	3.0000E-01	3.7500E-01
97	6.5930E 03	6.5000E-02	3.0000E-01	3.7500E-01
98	6.7650E 03	9.9000E-02	3.0000E-01	3.7500E-01
99	6.9040E 03	2.8800E-01	3.0000E-01	3.7500E-01

TABLE B-I (Page 9)

RESOLVED RESONANCE PARAMETERS

7. ARSENIC 75 (continued)

Res. No.	E RES.	GAMMA N	GAMMA G	G
100	6.9590E 03	7.1180E 00	3.0000E-01	3.7500E-01
101	7.0710E 03	5.6000E-01	3.0000E-01	3.7500E-01
102	7.1210E 03	2.2500E-01	3.0000E-01	3.7500E-01
103	7.2540E 03	3.4000E-02	3.0000E-01	3.7500E-01
104	7.2970E 03	2.3000E-02	3.0000E-01	3.7500E-01
105	7.3700E 03	3.4330E 00	3.0000E-01	3.7500E-01
106	7.4430E 03	2.3000E 00	3.0000E-01	3.7500E-01
107	7.4790E 03	2.3000E-02	3.0000E-01	3.7500E-01
108	7.5960E 03	8.1300E-01	3.0000E-01	3.7500E-01
109	7.6270E 03	2.3290E 00	3.0000E-01	3.7500E-01
110	7.6800E 03	7.0100E-01	3.0000E-01	3.7500E-01
111	7.7060E 03	2.3400E-01	3.0000E-01	3.7500E-01
112	7.7780E 03	1.7640E 00	3.0000E-01	3.7500E-01
113	7.8750E 03	1.6600E-01	3.0000E-01	3.7500E-01
114	7.9200E 03	8.7800E-01	3.0000E-01	3.7500E-01
115	8.0260E 03	3.5800E-01	3.0000E-01	3.7500E-01
116	8.2400E 03	4.5980E 00	3.0000E-01	3.7500E-01
117	8.3150E 03	3.6470E 00	3.0000E-01	3.7500E-01
118	8.3800E 03	7.8090E 00	3.0000E-01	3.7500E-01
119	8.4490E 03	2.5000E-02	3.0000E-01	3.7500E-01
120	8.5080E 03	2.9510E 00	3.0000E-01	3.7500E-01
121	8.5560E 03	2.9600E-01	3.0000E-01	3.7500E-01
122	8.5900E 03	1.1120E 00	3.0000E-01	3.7500E-01
123	8.6500E 03	9.9000E-02	3.0000E-01	3.7500E-01
124	8.7660E 03	3.7500E-01	3.0000E-01	3.7500E-01
125	8.8230E 03	9.5000E-02	3.0000E-01	3.7500E-01
126	8.8800E 03	1.8840E 00	3.0000E-01	3.7500E-01
127	9.0300E 03	1.4441E 01	3.0000E-01	3.7500E-01
128	9.1350E 03	7.6000E-02	3.0000E-01	3.7500E-01
129	9.1730E 03	1.0200E-01	3.0000E-01	3.7500E-01
130	9.2150E 03	1.6640E 00	3.0000E-01	3.7500E-01
131	9.3750E 03	1.0330E 00	3.0000E-01	3.7500E-01
132	9.4300E 03	2.5900E-01	3.0000E-01	3.7500E-01
133	9.5200E 03	5.7230E 00	3.0000E-01	3.7500E-01
134	9.5570E 03	3.1280E 00	3.0000E-01	3.7500E-01
135	9.6470E 03	7.8600E-01	3.0000E-01	3.7500E-01
136	9.6860E 03	1.9680E 00	3.0000E-01	3.7500E-01

TABLE B-I (Page 10)

RESOLVED RESONANCE PARAMETERS

8. SELENIUM 80

RES. NO.	E RES.	GAMMA N	GAMMA G	G
1	1.9800E 03	4.8000E 01	2.5000E-01	1.0000E 00
2	4.1000E 03	4.0000E 01	2.5000E-01	1.0000E 00
3	4.8000E 03	8.1000E 01	2.5000E-01	1.0000E 00
4	1.1850E 04	2.6800E 01	2.5000E-01	1.0000E 00
5	1.8300E 04	1.0980E 02	2.5000E-01	1.0000E 00
6	2.0900E 04	7.0600E 01	2.5000E-01	1.0000E 00
7	2.3900E 04	4.1200E 01	2.5000E-01	1.0000E 00
8	2.9600E 04	3.6250E 01	2.5000E-01	1.0000E 00
9	3.9900E 04	1.8700E 02	2.5000E-01	1.0000E 00

9. BROMINE 81

RES. NO.	E RES.	GAMMA N	GAMMA G	G
1	1.0100E 02	1.5500E-01	2.7500E-01	6.2500E-01
2	1.3550E 02	4.3000E-01	2.7000E-01	3.7500E-01
3	2.0500E 02	1.2800E-02	3.7000E-01	6.2500E-01

10. MOLYBDENUM 98

RES. NO.	E RES.	GAMMA N	GAMMA G	G
1	1.2000E 01	7.0000E-05	2.0000E-01	1.0000E 00
2	4.2940E 02	7.0000E-02	2.0000E-01	1.0000E 00
3	4.6720E 02	7.0000E-01	2.0000E-01	1.0000E 00
4	6.1200E 02	3.5000E-02	2.0000E-01	1.0000E 00
5	8.1700E 02	8.0000E-02	2.0000E-01	1.0000E 00
6	1.1050E 03	3.3000E-01	2.0000E-01	1.0000E 00
7	1.5190E 03	1.4000E 00	2.0000E-01	1.0000E 00
8	2.5500E 03	1.4400E 00	2.0000E-01	1.0000E 00
9	3.3000E 03	4.0000E 00	2.0000E-01	1.0000E 00
10	9.0000E 03	5.0000E 01	2.0000E-01	1.0000E 00

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RESOLVED RESONANCE PARAMETERS

11. MOLYBDENUM 100

RES. NO.	E RES.	GAMMA N	GAMMA G	G
1	9.7700E 01	5.6000E-04	2.0000E-01	1.0000E 00
2	3.6330E 02	1.0000E 00	2.0000E-01	1.0000E 00
3	1.0670E 03	4.2000E-01	2.0000E-01	1.0000E 00
4	1.2550E 03	3.1500E-01	2.0000E-01	1.0000E 00
5	1.6680E 03	1.1500E 00	2.0000E-01	1.0000E 00
6	1.9360E 03	3.3400E 00	2.0000E-01	1.0000E 00

12. RHODIUM 103

RES. NO.	E RES.	GAMMA N	GAMMA G	G
1	1.2570E 00	5.1500E-04	1.5500E-01	7.5000E-01
2	3.4400E 01	9.6000E-05	1.5500E-01	2.5000E-01
3	4.4450E 01	2.3000E-05	1.5500E-01	2.5000E-01
4	4.6700E 01	3.0000E-03	1.5400E-01	2.5000E-01
5	5.1800E 01	8.0000E-06	1.5500E-01	2.5000E-01
6	6.8300E 01	1.1800E-03	1.8000E-01	2.5000E-01
7	8.3450E 01	6.0000E-05	1.5500E-01	2.5000E-01
8	9.5600E 01	6.8000E-03	1.6000E-01	2.5000E-01
9	9.8700E 01	4.4000E-04	1.5500E-01	2.5000E-01
10	1.0877E 02	9.2000E-05	1.5500E-01	2.5000E-01
11	1.1070E 02	9.6000E-05	1.5500E-01	2.5000E-01
12	1.1390E 02	7.2000E-04	1.5500E-01	2.5000E-01
13	1.2550E 02	7.0000E-03	1.5500E-01	7.5000E-01
14	1.5420E 02	1.9000E-01	1.5500E-01	2.5000E-01
15	1.7900E 02	9.2000E-04	1.5500E-01	2.5000E-01
16	1.8700E 02	3.9000E-02	1.5000E-01	7.5000E-01
17	1.9968E 02	4.2000E-04	1.5500E-01	2.5000E-01
18	2.0500E 02	1.2000E-03	1.5500E-01	2.5000E-01
19	2.5130E 02	9.2000E-04	1.5500E-01	2.5000E-01
20	2.5380E 02	3.0000E-02	1.7000E-01	7.5000E-01
21	2.6310E 02	1.0000E-02	1.5500E-01	2.5000E-01
22	2.6420E 02	3.4000E-03	1.5500E-01	2.5000E-01
23	2.7220E 02	1.1300E-01	1.5500E-01	7.5000E-01
24	2.8980E 02	3.2000E-02	1.5500E-01	7.5000E-01
25	3.1250E 02	1.1000E-03	1.5500E-01	2.5000E-01

TABLE B-I (Page 12)

RESOLVED RESONANCE PARAMETERS

12. RHODIUM 103 (continued)

Res. No.	E RES.	GAMMA N	GAMMA G	G
26	3.1620E 02	3.4000E-04	1.5500E-01	2.5000E-01
27	3.1950E 02	1.7300E-01	1.6000E-01	7.5000E-01
28	3.2150E 02	6.8000E-03	1.5500E-01	2.5000E-01
29	3.2770E 02	4.8000E-03	1.5500E-01	2.5000E-01
30	3.5380E 02	7.2000E-04	1.5500E-01	2.5000E-01
31	3.6270E 02	2.4000E-03	1.5500E-01	2.5000E-01
32	3.6610E 02	1.0400E-02	1.5500E-01	2.5000E-01
33	3.7390E 02	2.8800E-03	1.5500E-01	2.5000E-01
34	3.7630E 02	7.5000E-04	1.5500E-01	2.5000E-01
35	3.8850E 02	1.3200E-03	1.5500E-01	2.5000E-01
36	4.0600E 02	2.6700E-02	1.5500E-01	7.5000E-01
37	4.2760E 02	8.4000E-04	1.5500E-01	2.5000E-01
38	4.3500E 02	1.3000E-01	1.5500E-01	7.5000E-01
39	4.4400E 02	1.5200E-03	1.5500E-01	2.5000E-01
40	4.4710E 02	1.2000E-03	1.5500E-01	2.5000E-01
41	4.5000E 02	2.3560E-02	1.5500E-01	2.5000E-01
42	4.6300E 02	6.0000E-03	1.5500E-01	2.5000E-01
43	4.7300E 02	7.0400E-03	1.5500E-01	2.5000E-01
44	4.7760E 02	2.4000E-03	1.5500E-01	2.5000E-01
45	4.8600E 02	7.8000E-03	1.5500E-01	2.5000E-01
46	4.8900E 02	1.2000E-03	1.5500E-01	2.5000E-01
47	4.9200E 02	1.7280E-02	1.5500E-01	2.5000E-01
48	5.0400E 02	3.8700E-03	1.5500E-01	2.5000E-01
49	5.1700E 02	8.0000E-04	1.5500E-01	2.5000E-01
50	5.5500E 02	7.3000E-02	1.8000E-01	7.5000E-01
51	5.8100E 02	1.7000E-02	1.5500E-01	2.5000E-01
52	6.0220E 02	2.2000E-03	1.5500E-01	2.5000E-01
53	6.0500E 02	1.5600E-02	1.5500E-01	2.5000E-01
54	6.0730E 02	1.1400E-03	1.5500E-01	2.5000E-01
55	6.2000E 02	3.7320E-02	1.5500E-01	2.5000E-01
56	6.4600E 02	6.7000E-02	1.5500E-01	7.5000E-01
57	6.6300E 02	3.6840E-02	1.5500E-01	2.5000E-01
58	6.7600E 02	1.5200E-02	1.5500E-01	2.5000E-01
59	6.8300E 02	2.0480E-02	1.5500E-01	2.5000E-01
60	6.9200E 02	8.3000E-02	1.5500E-01	7.5000E-01
61	7.0100E 02	2.6600E-01	1.5500E-01	7.5000E-01
62	7.2680E 02	5.6400E-03	1.5500E-01	2.5000E-01
63	7.4120E 02	2.2000E-02	1.5500E-01	2.5000E-01
64	7.4600E 02	1.2680E-02	1.5500E-01	2.5000E-01
65	7.5700E 02	5.6000E-03	1.5500E-01	2.5000E-01
66	7.8200E 02	1.6000E-01	1.5500E-01	2.5000E-01
67	7.8850E 02	6.0000E-03	1.5500E-01	2.5000E-01
68	7.9500E 02	2.8000E-02	1.5500E-01	2.5000E-01

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RESOLVED RESONANCE PARAMETERS

13. PALLADIUM 108

RES. NO.	E RES.	GAMMA N	GAMMA G	G
1	2.9600E 00	5.0400E-06	9.0000E-02	1.0000E 00
2	3.3240E 01	8.0000E-02	1.1600E-01	1.0000E 00
3	9.1600E 01	1.5000E-01	1.0000E-01	1.0000E 00

14. CADMIUM 114

RES. NO.	E RES.	GAMMA N	GAMMA G	G
1	1.2020E 02	4.4000E-02	1.5000E-01	1.0000E 00
2	2.2600E 02	1.8000E-03	1.5000E-01	1.0000E 00
3	3.9410E 02	7.6000E-01	1.5000E-01	1.0000E 00
4	6.7300E 02	2.2000E-01	1.5000E-01	1.0000E 00
5	7.5600E 02	1.4000E-01	1.5000E-01	1.0000E 00
6	1.1070E 03	1.5000E 00	1.5000E-01	1.0000E 00

15. INDIUM 115

RES. NO.	E RES.	GAMMA N	GAMMA G	G
1	1.4560E 00	3.0400E-03	7.2000E-02	5.5000E-01
2	3.8600E 00	3.5400E-04	8.1000E-02	4.5000E-01
3	9.1200E 00	1.5700E-03	8.0000E-02	5.5000E-01
4	1.2100E 01	1.2400E-04	8.0000E-02	4.5000E-01
5	2.3000E 01	1.3100E-03	8.0000E-02	4.5000E-01
6	3.9900E 01	4.0000E-03	8.0000E-02	4.5000E-01
7	4.6300E 01	4.8000E-04	8.0000E-02	4.5000E-01
8	4.8600E 01	7.2000E-04	8.0000E-02	4.5000E-01
9	6.3200E 01	1.2000E-03	8.0000E-02	4.5000E-01
10	8.3500E 01	1.2200E-02	8.0000E-02	4.5000E-01
11	9.5000E 01	2.9000E-03	8.0000E-02	4.5000E-01

TABLE B-I (Page 14)

RESOLVED RESONANCE PARAMETERS

16. ANTIMONY 121

RES. NO.	E RES.	GAMMA N	GAMMA G	G
1	6.2400E 00	2.4000E-03	9.0000E-02	4.1670E-01
2	1.5400E 01	8.2800E-03	9.5000E-02	4.1670E-01
3	2.9700E 01	5.8800E-03	8.5000E-02	4.1670E-01
4	5.3500E 01	2.6400E-03	1.2000E-01	4.1670E-01
5	6.4500E 01	7.8000E-04	1.2000E-01	4.1670E-01
6	7.3800E 01	9.6000E-03	1.1500E-01	4.1670E-01
7	8.9600E 01	2.0400E-02	1.2000E-01	4.1670E-01
8	1.1140E 02	3.8400E-02	1.2000E-01	4.1670E-01
9	1.2680E 02	3.9600E-02	1.1500E-01	4.1670E-01
10	1.3190E 02	1.3200E-02	1.6500E-01	4.1670E-01
11	1.4420E 02	1.6800E-02	1.1000E-01	4.1670E-01
12	1.4990E 02	3.4800E-02	1.5000E-01	4.1670E-01
13	1.6050E 02	2.3000E-03	1.2000E-01	4.1670E-01
14	1.6710E 02	2.1600E-02	1.2000E-01	4.1670E-01

17. CESIUM 133

RES. NO.	E RES.	GAMMA N	GAMMA G	G
1	5.9000E 00	5.2000E-03	1.1500E-01	5.0000E-01
2	2.2600E 01	6.6000E-03	1.2000E-01	5.0000E-01
3	4.7800E 01	1.9000E-02	1.4000E-01	5.0000E-01
4	8.3100E 01	9.0000E-03	1.2000E-01	5.0000E-01
5	9.4800E 01	1.9000E-02	1.2000E-01	5.0000E-01
6	1.2610E 02	1.1000E-01	1.2000E-01	5.0000E-01
7	1.4220E 02	6.6000E-03	1.2000E-01	5.0000E-01
8	1.4590E 02	2.9000E-02	1.2000E-01	5.0000E-01
9	1.8150E 02	2.4000E-03	1.2000E-01	5.0000E-01
10	1.9250E 02	2.8000E-04	1.2000E-01	5.0000E-01
11	2.0090E 02	3.1000E-02	1.2000E-01	5.0000E-01
12	2.0730E 02	2.9000E-03	1.2000E-01	5.0000E-01
13	2.2040E 02	2.4000E-02	1.2000E-01	5.0000E-01
14	2.3440E 02	4.3000E-01	1.2000E-01	5.0000E-01
15	2.3840E 02	1.4000E-02	1.2000E-01	5.0000E-01
16	2.5900E 02	3.0000E-04	1.2000E-01	5.0000E-01
17	2.9560E 02	1.0000E-01	1.2000E-01	5.0000E-01
18	3.0490E 02	3.0000E-04	1.2000E-01	5.0000E-01
19	3.1590E 02	4.0000E-04	1.2000E-01	5.0000E-01
20	3.5900E 02	4.2000E-02	1.2000E-01	5.0000E-01

TABLE B-I (Page 15)

RESOLVED RESONANCE PARAMETERS

17. CESIUM 133 (continued)

Res. No.	E RES.	GAMMA N	GAMMA G	G
21	3.7740E 02	1.9000E-02	1.2000E-01	5.0000E-01
22	4.0120E 02	2.6000E-01	1.2000E-01	5.0000E-01
23	4.1350E 02	5.9000E-02	1.2000E-01	5.0000E-01
24	4.1550E 02	4.1000E-03	1.2000E-01	5.0000E-01
25	4.3080E 02	6.4000E-02	1.2000E-01	5.0000E-01
26	4.3750E 02	4.0000E-04	1.2000E-01	5.0000E-01
27	4.6990E 02	1.0200E-01	1.2000E-01	5.0000E-01
28	5.1160E 02	1.2500E-01	1.2000E-01	5.0000E-01
29	5.1970E 02	1.0700E-01	1.2000E-01	5.0000E-01
30	5.6030E 02	7.8000E-02	1.2000E-01	5.0000E-01
31	5.6840E 02	1.9000E-02	1.2000E-01	5.0000E-01
32	5.8550E 02	1.6900E-01	1.2000E-01	5.0000E-01
33	6.2260E 02	1.0000E-03	1.2000E-01	5.0000E-01
34	6.4630E 02	5.1000E-02	1.2000E-01	5.0000E-01
35	6.8440E 02	2.6000E-03	1.2000E-01	5.0000E-01
36	7.1230E 02	3.2000E-03	1.2000E-01	5.0000E-01
37	7.2660E 02	1.1900E-01	1.2000E-01	5.0000E-01
38	7.3800E 02	1.1000E-03	1.2000E-01	5.0000E-01
39	7.6290E 02	7.7000E-02	1.2000E-01	5.0000E-01
40	7.9570E 02	3.0500E-01	1.2000E-01	5.0000E-01
41	8.0760E 02	1.1000E-02	1.2000E-01	5.0000E-01
42	8.2100E 02	1.7000E-03	1.2000E-01	5.0000E-01
43	8.3270E 02	5.8000E-03	1.2000E-01	5.0000E-01
44	8.6390E 02	1.8200E-01	1.2000E-01	5.0000E-01
45	8.7230E 02	1.9000E-02	1.2000E-01	5.0000E-01
46	9.0660E 02	1.0500E-01	1.2000E-01	5.0000E-01
47	9.1410E 02	2.4000E-03	1.2000E-01	5.0000E-01
48	9.1720E 02	2.4000E-03	1.2000E-01	5.0000E-01
49	9.7050E 02	6.2000E-03	1.2000E-01	5.0000E-01
50	9.8640E 02	3.8000E-02	1.2000E-01	5.0000E-01
51	9.9420E 02	7.9000E-02	1.2000E-01	5.0000E-01
52	1.0187E 03	6.4000E-03	1.2000E-01	5.0000E-01
53	1.0214E 03	1.6900E-01	1.2000E-01	5.0000E-01
54	1.0386E 03	3.9000E-02	1.2000E-01	5.0000E-01
55	1.0696E 03	5.2000E-02	1.2000E-01	5.0000E-01
56	1.1183E 03	2.0100E-01	1.2000E-01	5.0000E-01
57	1.1349E 03	1.1500E-01	1.2000E-01	5.0000E-01
58	1.1562E 03	2.4000E-02	1.2000E-01	5.0000E-01
59	1.1770E 03	6.9000E-02	1.2000E-01	5.0000E-01
60	1.1870E 03	2.1000E-02	1.2000E-01	5.0000E-01
61	1.2397E 03	2.3200E-01	1.2000E-01	5.0000E-01
62	1.2493E 03	4.2000E-02	1.2000E-01	5.0000E-01
63	1.2676E 03	3.5600E-01	1.2000E-01	5.0000E-01
64	1.2726E 03	2.9000E-03	1.2000E-01	5.0000E-01
65	1.2801E 03	1.7900E-01	1.2000E-01	5.0000E-01

TABLE B-I (Page 16)

RESOLVED RESONANCE PARAMETERS

17. CESIUM 133 (continued)

Res. No.	E RES.	GAMMA N	GAMMA G	G
66	1.3063E 03	2.2000E-03	1.2000E-01	5.0000E-01
67	1.3128E 03	2.2000E-03	1.2000E-01	5.0000E-01
68	1.3220E 03	1.6000E-01	1.2000E-01	5.0000E-01
69	1.3293E 03	1.4600E-01	1.2000E-01	5.0000E-01
70	1.3454E 03	1.5000E-03	1.2000E-01	5.0000E-01
71	1.3898E 03	3.7000E-02	1.2000E-01	5.0000E-01
72	1.4232E 03	1.4300E-01	1.2000E-01	5.0000E-01
73	1.4291E 03	1.2000E-02	1.2000E-01	5.0000E-01
74	1.4433E 03	3.8000E-03	1.2000E-01	5.0000E-01
75	1.4531E 03	2.0600E-01	1.2000E-01	5.0000E-01
76	1.4646E 03	1.2000E-02	1.2000E-01	5.0000E-01
77	1.4809E 03	5.4000E-03	1.2000E-01	5.0000E-01
78	1.5249E 03	8.6000E-02	1.2000E-01	5.0000E-01
79	1.5331E 03	1.7000E-02	1.2000E-01	5.0000E-01
80	1.5455E 03	3.9000E-02	1.2000E-01	5.0000E-01
81	1.5838E 03	3.9000E-03	1.2000E-01	5.0000E-01
82	1.5942E 03	3.9900E-01	1.2000E-01	5.0000E-01
83	1.6163E 03	1.2100E-01	1.2000E-01	5.0000E-01
84	1.6270E 03	3.2000E-03	1.2000E-01	5.0000E-01
85	1.6646E 03	9.0000E-02	1.2000E-01	5.0000E-01
86	1.6825E 03	4.1000E-01	1.2000E-01	5.0000E-01
87	1.7055E 03	1.2400E-01	1.2000E-01	5.0000E-01
88	1.7260E 03	1.7000E-03	1.2000E-01	5.0000E-01
89	1.7348E 03	5.0000E-02	1.2000E-01	5.0000E-01
90	1.7609E 03	1.2600E-01	1.2000E-01	5.0000E-01
91	1.8096E 03	3.4000E-02	1.2000E-01	5.0000E-01
92	1.8286E 03	4.3000E-03	1.2000E-01	5.0000E-01
93	1.8430E 03	5.2000E-03	1.2000E-01	5.0000E-01
94	1.8493E 03	3.0000E-02	1.2000E-01	5.0000E-01
95	1.8537E 03	1.3000E-02	1.2000E-01	5.0000E-01
96	1.8995E 03	4.4000E-03	1.2000E-01	5.0000E-01
97	1.9155E 03	1.3000E-02	1.2000E-01	5.0000E-01
98	1.9344E 03	3.5000E-03	1.2000E-01	5.0000E-01
99	1.9540E 03	8.8000E-02	1.2000E-01	5.0000E-01
100	2.0000E 03	2.7000E-03	1.2000E-01	5.0000E-01
101	2.0510E 03	3.2000E-02	1.2000E-01	5.0000E-01
102	2.0600E 03	4.9900E-01	1.2000E-01	5.0000E-01
103	2.0900E 03	4.6000E-03	1.2000E-01	5.0000E-01
104	2.0990E 03	1.1900E-01	1.2000E-01	5.0000E-01
105	2.1140E 03	1.8000E-03	1.2000E-01	5.0000E-01
106	2.1220E 03	3.0400E-01	1.2000E-01	5.0000E-01
107	2.1330E 03	4.6000E-03	1.2000E-01	5.0000E-01
108	2.1610E 03	9.3000E-03	1.2000E-01	5.0000E-01
109	2.1720E 03	2.3000E-02	1.2000E-01	5.0000E-01
110	2.1820E 03	1.3100E-01	1.2000E-01	5.0000E-01

TABLE B-I (Page 17)

RESOLVED RESONANCE PARAMETERS

17. CESIUM 133 (continued)

Res.No.	E RES.	GAMMA N	GAMMA G	G
111	2.1970E 03	4.7000E-02	1.2000E-01	5.0000E-01
112	2.2610E 03	3.3300E-01	1.2000E-01	5.0000E-01
113	2.2800E 03	2.2900E-01	1.2000E-01	5.0000E-01
114	2.2950E 03	6.7000E-02	1.2000E-01	5.0000E-01
115	2.3120E 03	2.2100E-01	1.2000E-01	5.0000E-01
116	2.3430E 03	1.9000E-03	1.2000E-01	5.0000E-01
117	2.3520E 03	1.9000E-03	1.2000E-01	5.0000E-01
118	2.3760E 03	1.0730E 00	1.2000E-01	5.0000E-01
119	2.3870E 03	9.8000E-03	1.2000E-01	5.0000E-01
120	2.3920E 03	1.5000E-02	1.2000E-01	5.0000E-01
121	2.4290E 03	1.9700E-01	1.2000E-01	5.0000E-01
122	2.4470E 03	5.0000E-03	1.2000E-01	5.0000E-01
123	2.4580E 03	2.0000E-03	1.2000E-01	5.0000E-01
124	2.4740E 03	5.4000E-02	1.2000E-01	5.0000E-01
125	2.4920E 03	5.0000E-03	1.2000E-01	5.0000E-01
126	2.5030E 03	3.0000E-02	1.2000E-01	5.0000E-01
127	2.5240E 03	2.0000E-03	1.2000E-01	5.0000E-01
128	2.5370E 03	3.5000E-02	1.2000E-01	5.0000E-01
129	2.5610E 03	1.2100E-01	1.2000E-01	5.0000E-01
130	2.5700E 03	3.5000E-02	1.2000E-01	5.0000E-01
131	2.5910E 03	1.5000E-02	1.2000E-01	5.0000E-01
132	2.6040E 03	7.1000E-02	1.2000E-01	5.0000E-01
133	2.6230E 03	5.1000E-03	1.2000E-01	5.0000E-01
134	2.6830E 03	1.2400E-01	1.2000E-01	5.0000E-01
135	2.7050E 03	2.1000E-03	1.2000E-01	5.0000E-01
136	2.7230E 03	5.7400E-01	1.2000E-01	5.0000E-01
137	2.7330E 03	2.1000E-03	1.2000E-01	5.0000E-01
138	2.7550E 03	6.3000E-01	1.2000E-01	5.0000E-01
139	2.7770E 03	5.3000E-03	1.2000E-01	5.0000E-01
140	2.7940E 03	2.7500E-01	1.2000E-01	5.0000E-01
141	2.8380E 03	5.3000E-03	1.2000E-01	5.0000E-01
142	2.8760E 03	2.1000E-03	1.2000E-01	5.0000E-01
143	2.8920E 03	2.1000E-03	1.2000E-01	5.0000E-01
144	2.8980E 03	1.9400E-01	1.2000E-01	5.0000E-01
145	2.9100E 03	1.4600E-01	1.2000E-01	5.0000E-01
146	2.9250E 03	2.2000E-03	1.2000E-01	5.0000E-01
147	2.9430E 03	3.0400E-01	1.2000E-01	5.0000E-01
148	2.9820E 03	9.8000E-02	1.2000E-01	5.0000E-01
149	3.0070E 03	8.8000E-02	1.2000E-01	5.0000E-01
150	3.0160E 03	2.6400E-01	1.2000E-01	5.0000E-01
151	3.0710E 03	3.9000E-02	1.2000E-01	5.0000E-01
152	3.0950E 03	1.7000E-02	1.2000E-01	5.0000E-01
153	3.1140E 03	2.2000E-02	1.2000E-01	5.0000E-01
154	3.1200E 03	3.3500E-01	1.2000E-01	5.0000E-01
155	3.1500E 03	3.4000E-02	1.2000E-01	5.0000E-01

TABLE B-I (Page 18)

RESOLVED RESONANCE PARAMETERS

17. CESIUM 133 (continued)

Res. No.	E RES.	GAMMA N	GAMMA G	G
156	3.1900E 03	1.1300E 00	1.2000E-01	5.0000E-01
157	3.3060E 03	7.4800E-01	1.2000E-01	5.0000E-01
158	3.3350E 03	2.1400E-01	1.2000E-01	5.0000E-01
159	3.3540E 03	2.6600E-01	1.2000E-01	5.0000E-01
160	3.3730E 03	1.0500E-01	1.2000E-01	5.0000E-01
161	3.4020E 03	2.3000E-02	1.2000E-01	5.0000E-01
162	3.4220E 03	3.5100E-01	1.2000E-01	5.0000E-01
163	3.4440E 03	5.9000E-02	1.2000E-01	5.0000E-01
164	3.4800E 03	1.5340E 00	1.2000E-01	5.0000E-01
165	3.5000E 03	1.1800E-01	1.2000E-01	5.0000E-01

18. LANTHENUM 139

RES. NO.	E RES.	GAMMA N	GAMMA G	G
1	7.2400E 01	3.4000E-02	1.2000E-01	4.3750E-01

19. SAMARIUM 152

RES. NO.	E RES.	GAMMA N	GAMMA G	G
1	8.0100E 00	7.9000E-02	5.7000E-02	1.0000E 00

TABLE B-I (Page 19)

RESOLVED RESONANCE PARAMETERS

20. TUNGSTEN 186

RES. NO.	E RES.	GAMMA N	GAMMA G	G
1	1.8800E 01	2.6600E-01	5.3000E-02	1.0000E 00
2	1.1130E 02	4.0000E-05	7.0000E-02	1.0000E 00
3	1.7150E 02	2.7000E-02	7.5000E-02	1.0000E 00
4	1.9760E 02	6.0000E-04	7.0000E-02	1.0000E 00
5	2.1800E 02	5.3000E-01	6.2000E-02	1.0000E 00
6	2.4500E 02	2.0000E-04	7.0000E-02	1.0000E 00
7	2.8800E 02	2.6000E-02	7.0000E-02	1.0000E 00
8	4.0700E 02	7.5000E-02	6.2000E-02	1.0000E 00
9	4.5800E 02	8.0000E-04	7.0000E-02	1.0000E 00
10	5.1200E 02	6.5000E-02	4.9000E-02	1.0000E 00
11	5.4300E 02	5.0000E-01	6.5000E-02	1.0000E 00
12	6.6600E 02	7.5000E-01	8.5000E-02	1.0000E 00
13	7.3200E 02	2.1000E 00	9.2000E-02	1.0000E 00
14	7.7400E 02	6.0000E-03	7.0000E-02	1.0000E 00
15	8.3500E 02	2.0000E-02	7.0000E-02	1.0000E 00
16	8.5800E 02	2.0000E-03	7.0000E-02	1.0000E 00
17	9.6800E 02	1.1000E 00	7.2000E-02	1.0000E 00
18	1.0800E 03	6.5000E-01	6.1000E-02	1.0000E 00
19	1.1300E 03	4.5000E-01	6.2000E-02	1.0000E 00
20	1.1900E 03	7.7000E-01	5.5000E-02	1.0000E 00
21	1.4200E 03	2.5000E-01	9.0000E-02	1.0000E 00
22	1.5100E 03	1.2000E 00	6.8000E-02	1.0000E 00
23	1.5500E 03	4.6000E-03	7.0000E-02	1.0000E 00
24	1.8000E 03	1.0000E-01	6.5000E-02	1.0000E 00
25	1.9400E 03	5.5000E-01	6.0000E-02	1.0000E 00
26	2.0400E 03	4.0000E-01	6.7000E-02	1.0000E 00
27	2.1200E 03	1.1000E-01	6.7000E-02	1.0000E 00

TABLE B-I (Page 20)

RESOLVED RESONANCE PARAMETERS

21. RHENIUM 187

RES. NO.	E RES.	GAMMA N	GAMMA G	G
1	4.4100E 00	3.8000E-04	5.0000E-02	5.0000E-01
2	1.1140E 01	2.1400E-03	6.2000E-02	5.0000E-01
3	1.6100E 01	7.2000E-04	6.4000E-02	5.0000E-01
4	1.7600E 01	2.1300E-03	6.1000E-02	5.0000E-01
5	1.8600E 01	7.4000E-04	6.1000E-02	5.0000E-01
6	2.4900E 01	1.3000E-04	5.4000E-02	5.0000E-01
7	3.2200E 01	9.6400E-03	5.4000E-02	5.0000E-01
8	3.4100E 01	1.1800E-03	4.2000E-02	5.0000E-01
9	3.9500E 01	1.4000E-02	5.0000E-02	5.0000E-01
10	4.7500E 01	6.0300E-03	5.4000E-02	5.0000E-01
11	5.3900E 01	3.8000E-03	5.4000E-02	5.0000E-01
12	6.1500E 01	2.2000E-02	5.4000E-02	5.0000E-01

22. IRIDIUM 191

RES. NO.	E RES.	GAMMA N	GAMMA G	G
1	6.5400E-01	5.0000E-04	7.3500E-02	6.2500E-01
2	5.3600E 00	4.7800E-03	1.0200E-01	6.2500E-01
3	6.1300E 00	5.3600E-04	7.2000E-02	5.0000E-01
4	9.0700E 00	4.4000E-03	8.7000E-02	5.0000E-01
5	9.9000E 00	5.9000E-04	8.7000E-02	5.0000E-01
6	1.0400E 01	3.3000E-04	8.7000E-02	5.0000E-01
7	1.9300E 01	3.1000E-03	8.7000E-02	5.0000E-01
8	2.0300E 01	1.8000E-03	8.7000E-02	5.0000E-01
9	2.1200E 01	9.0000E-05	8.7000E-02	5.0000E-01
10	2.5300E 01	1.9300E-02	8.7000E-02	5.0000E-01
11	3.0000E 01	1.9600E-02	9.8000E-02	5.0000E-01
12	3.1800E 01	3.6000E-03	8.7000E-02	5.0000E-01
13	3.6600E 01	3.5000E-03	8.7000E-02	5.0000E-01
14	4.0600E 01	5.9000E-03	8.7000E-02	5.0000E-01
15	5.1300E 01	6.5500E-02	8.7000E-02	3.7500E-01

23. PLATINUM 198

RES. NO.	E RES.	GAMMA N	GAMMA G	G
1	9.6000E 01	4.5200E-01	1.0500E-01	1.0000E 00
2	2.6050E 02	1.4300E-01	2.2300E-01	1.0000E 00
3	3.0780E 02	2.1600E-01	6.9000E-02	1.0000E 00

TABLE B-I (Page 21)

RESOLVED RESONANCE PARAMETERS

24. GOLD 197

RES. NO.	E RES.	GAMMA N	GAMMA G	G
1	4.9060E 00	1.5600E-02	1.2400E-01	6.2500E-01
2	4.6500E 01	1.4000E-04	1.3800E-01	3.7500E-01
3	5.8000E 01	4.5300E-03	1.2800E-01	3.7500E-01
4	6.0200E 01	7.2000E-02	1.2700E-01	6.2500E-01
5	7.8400E 01	1.6800E-02	1.2600E-01	3.7500E-01
6	1.0700E 02	7.6700E-03	1.3300E-01	6.2500E-01
7	1.2220E 02	1.5100E-03	1.3800E-01	3.7500E-01
8	1.4430E 02	8.5700E-03	1.5400E-01	3.7500E-01
9	1.5130E 02	2.2400E-02	1.2900E-01	6.2500E-01
10	1.6300E 02	5.2400E-02	1.2800E-01	3.7500E-01
11	1.6500E 02	9.4000E-03	1.0600E-01	6.2500E-01
12	1.9000E 02	4.2000E-02	1.5800E-01	3.7500E-01
13	2.0930E 02	9.6000E-04	1.3800E-01	3.7500E-01
14	2.4050E 02	7.1400E-02	1.2800E-01	6.2500E-01
15	2.5580E 02	8.0000E-04	1.3800E-01	3.7500E-01
16	2.6220E 02	1.3900E-01	1.2600E-01	3.7500E-01
17	2.7390E 02	6.9000E-03	1.3800E-01	3.7500E-01
18	2.9340E 02	3.8100E-01	1.4600E-01	6.2500E-01
19	3.2980E 02	4.6000E-02	1.3400E-01	6.2500E-01
20	3.3140E 02	7.1000E-02	1.3800E-01	3.7500E-01
21	3.5560E 02	3.6700E-02	1.4400E-01	6.2500E-01
22	3.7130E 02	8.4800E-02	1.0600E-01	6.2500E-01
23	3.7560E 02	1.4200E-02	1.3800E-01	3.7500E-01
24	3.8230E 02	6.3200E-02	1.0300E-01	6.2500E-01
25	4.0000E 02	2.0400E-02	1.3900E-01	6.2500E-01
26	4.4040E 02	2.8850E-01	1.3700E-01	3.7500E-01
27	4.5130E 02	6.5500E-02	1.1400E-01	6.2500E-01
28	4.7760E 02	2.9890E-01	1.5100E-01	6.2500E-01
29	4.9090E 02	6.0000E-02	1.3000E-01	3.7500E-01
30	4.9490E 02	1.8000E-02	1.3600E-01	6.2500E-01
31	5.3510E 02	3.1100E-02	1.3400E-01	6.2500E-01
32	5.4880E 02	5.2600E-02	1.1600E-01	3.7500E-01
33	5.6320E 02	4.6000E-03	1.3800E-01	3.7500E-01
34	5.7900E 02	3.7000E-01	1.5000E-01	6.2500E-01
35	5.8080E 02	1.4500E-01	1.1500E-01	3.7500E-01
36	5.8840E 02	1.5000E-02	1.3400E-01	3.7500E-01
37	6.0440E 02	2.1120E-01	1.5000E-01	6.2500E-01
38	6.1910E 02	7.2200E-02	1.6000E-01	6.2500E-01
39	6.2630E 02	6.0000E-02	1.3500E-01	3.7500E-01
40	6.3010E 02	4.0000E-02	1.3000E-01	6.2500E-01
41	6.4140E 02	4.5000E-01	1.5000E-01	6.2500E-01
42	6.6140E 02	7.2000E-03	1.3800E-01	3.7500E-01
43	6.8850E 02	1.3300E-02	1.3800E-01	3.7500E-01
44	6.9850E 02	6.6500E-01	1.6500E-01	3.7500E-01
45	7.0250E 02	7.3600E-01	1.4400E-01	6.2500E-01

TABLE B-I (Page 22)

RESOLVED RESONANCE PARAMETERS

24. GOLD 197 (continued)

Res.No.	E RES.	GAMMA N	GAMMA G	G
46	7.1830E 02	1.0070E-01	1.4500E-01	6.2500E-01
47	7.4070E 02	1.4000E-02	1.3800E-01	3.7500E-01
48	7.6300E 02	4.2600E-01	1.5400E-01	3.7500E-01
49	7.7740E 02	4.7400E-01	1.2600E-01	3.7500E-01
50	7.8770E 02	1.1000E-01	1.6000E-01	6.2500E-01
51	7.9950E 02	1.7400E-01	1.5000E-01	6.2500E-01
52	8.1630E 02	2.2100E-02	1.3800E-01	3.7500E-01
53	8.2230E 02	2.3000E-01	1.5000E-01	6.2500E-01
54	8.2800E 02	5.3300E-01	1.6500E-01	6.2500E-01
55	8.6760E 02	2.7200E-02	1.4600E-01	3.7500E-01
56	8.8280E 02	7.0700E-02	1.1200E-01	3.7500E-01
57	9.3620E 02	4.2200E-01	1.3000E-01	6.2500E-01
58	9.5610E 02	1.0000E-02	1.3800E-01	3.7500E-01
59	9.6120E 02	1.1000E-01	1.5000E-01	3.7500E-01
60	9.8420E 02	3.2900E-01	1.5000E-01	6.2500E-01
61	9.8850E 02	1.2100E-01	1.7000E-01	6.2500E-01
62	9.9540E 02	5.0000E-01	1.5000E-01	6.2500E-01

Table B-II

UNRESOLVED RESONANCE PARAMETERS

		l = 0										
Isotope	Spin I	J_1	J_2	$\langle\Gamma_\gamma\rangle$ (eV)	$\langle\Gamma^{(o)}_{nJ_1}\rangle$ (eV)	$\langle\Gamma^{(o)}_{nJ_2}\rangle$ (eV)	$\langle D_{J_1}\rangle$ (eV)	$\langle D_{J_2}\rangle$ (eV)	$S_{J_1} \times 10^4$	$S_{J_2} \times 10^4$	$S_{l=1} \times 10^4$	σ_{pot} (b)
Na23	3/2	1	2	0.3	3.69	3.52	38300	67000	0.96	0.53	3.0	1.9
V51	7/2	3	4	0.5	9.40	9.22	12600	11400	7.44	8.06	1.5	2.5
Mn55	5/2	2	3	0.5	1.46	3.18	6280	7230	2.33	4.40	1.2	5.1
Co59	7/2	3	4	0.53	1.55	0.97	3720	3850	4.17	2.51	1.1	6.5
Cu63	3/2	1	2	0.55	0.573	0.694	2910	2190	1.97	3.17	1.1	6.7
Ga71	3/2	1	2	0.35	0.242	0.165	516	351	4.69	4.69	1.5	6.4
As75	3/2	1	2	0.3	0.0290	0.0603	306	258	0.95	2.34	2.6	6.2
Se80	0	1/2		0.25	0.648		4740		1.37		3.3	6.0
Br81	3/2	1	2	0.3	0.0219	0.0149	128	87	1.71	1.71	3.4	6.0
Mo98	0	1/2		0.2	0.010		129		0.78		4.0	5.4
Mo100	0	1/2		0.2	0.036		393		0.92		3.5	5.4
Rh103	1/2	0	1	0.155	0.0133	0.0047	142	50	0.94	0.94	3.0	5.1
Pd108	0	1/2		0.1	0.0072		60		1.20		3.0	4.8
Cd114	0	1/2		0.15	0.0168		197		0.85		3.0	4.5
In115	9/2	4	5	0.08	0.00104	0.00117	17.7	19.8	0.59	0.59	3.0	4.5
Sb121	5/2	2	3	0.12	0.00173	0.00149	26.8	23.1	0.64	0.64	2.8	4.2
Cs133	7/2	3	4	0.12	0.00281	0.00281	42.6	42.6	0.66	0.66	1.9	3.5
La139	7/2	3	4	0.09	0.0298	0.0298	298	298	1.00	1.00	1.5	3.2
Sm152	0	1/2		0.06	0.0110		55.0		2.0		1.7	3.5
W186	0	1/2		0.07	0.0146		80.8		1.81		2.2	11.0
Re187	5/2	2	3	0.054	0.000818	0.000705	11.2	9.66	0.73	0.73	2.2	11.0
Ir191	3/2	1	2	0.087	0.00201	0.00137	8.94	6.08	2.25	2.25	2.0	10.8
Pt198	0	1/2		0.13	0.0224		106		2.11		1.7	10.7
Au197	3/2	1	2	0.138	0.00606	0.00765	50.2	33.0	1.21	2.32	1.7	10.8

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