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Photon Cross Sections from 0.001 to 100 MeV for Elements 1 through 100

UNITED STATES
ATOMIC ENERGY COMMISSION
CONTRACT W-7405-ENG. 36

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Printed in the United States of America. Available from Clearinghouse for Federal Scientific and Technical Information National Bureau of Standards, U. S. Department of Commerce Springfield, Virginia 22151

Price: Printed Copy $3.00; Microfiche $0.65

LA-3753
UC-34, PHYSICS
TID-4500

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Report written: June 1967
Report distributed: November 15, 1967

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by

Ellery Storm
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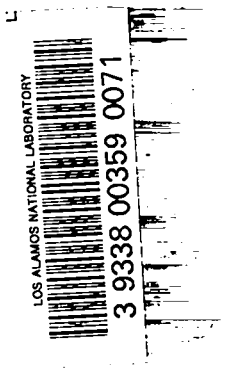

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PHOTON CROSS SECTIONS FROM 0.001 TO 100 MeV

FOR ELEMENTS 1 THROUGH 100

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ABSTRACT

The report contains tables of photon cross sections in the range 0.001 to 100 MeV for Z = 1 to 100. Supplementary tables of mass attenuation coefficients for air, water, concrete, and sodium iodide; x-ray atomic energy levels; line energies; average energies; relative intensities; and fluorescence yields are also presented.

DESCRIPTION OF CROSS SECTION TABLES

In 1952 White[1] tabulated in NBS Report 1003 photon cross sections based primarily on theoretical calculations. Her tables, which covered an energy range of 0.01 to 100 MeV and included 19 elements, were published in the Handbook of Radiology[2] in 1955. Grodstein (formerly White) revised the tables in 1957 and presented them in NBS Circular 583.[3] She included the following cross sections in her tables: photoelectric, pair production in the field of the atomic nucleus and of the atomic electrons, incoherent plus coherent scatter of bound electrons, and the total cross section with and without coherent scatter.

In 1958 we[4] interpolated Grodstein's values to obtain photon cross sections for all elements 1 to 100 and published the tables in LA-2237. We did not include the incoherent plus coherent sum nor the total minus coherent cross sections, but instead gave the individual coherent and incoherent cross sections, the total pair production cross section, and a sum of the photoelectric, the incoherent absorption, and the total pair production cross sections intended to represent the true absorption or energy transferred to the medium.

McGinnies[5] in 1959 published a supplement to NBS Circular 583 showing that the recent experimental photoelectric cross sections differed from the calculations, particularly below the K edge, by as much as 100%. Allison[6] and Berger[7] in 1961 pointed out that in the photoelectric and pair production interactions, as in the incoherent interaction, not all the initial photon energy was transmitted to the medium by particles (electrons, positrons), but

that a portion of it was carried off by photons (fluorescence and bremsstrahlung radiation) beyond the immediate neighborhood of interest. Allison and Berger calculated the average fraction of the energy transferred to the medium in the photoelectric, incoherent, and pair production interactions for several elements. Davisson[8] in 1965, using experimental photoelectric cross sections and the calculated values of Hultberg et al.[9] and Pratt et al.[10] published a revision of the Grodstein tables in Alpha-, Beta-, and Gamma-Ray Spectroscopy (edited by K. Siegbahn). In 1966 Hubbell and Berger,[11] in NBS Circular 8681, revised some of the photoelectric values of Davisson on the basis of more recent calculations by Hultberg et al.,[12] Pratt and Schmickley,[13] and Rakavy and Ron.[14] In addition Hubbell and Berger included double-Compton scattering and radiative corrections to incoherent scatter cross sections, added radiative and screening corrections to nuclear-field pair production, and revised the electron-field pair production cross sections using calculations of Mork.[15] Grodstein had used the Thomas-Fermi model to calculate the coherent and incoherent scatter cross sections, but, recently, coherent form factors[16] and incoherent scattering functions[17] derived from Hartree-Fock wave functions have been published.

In view of the changes in the photoelectric cross sections, the new information on energy transfer cross sections for the photoelectric and pair production interactions, and the availability of the more accurate Hartree-Fock coherent form factors and incoherent scattering functions, we decided that an updated version of the data described in LA-2237 would be worthwhile. The work was begun in June 1966 and completed in June 1967.

A number of major changes have been made. The energy range, which was 0.01 to 100 MeV, has been broadened to 0.001 to 100 MeV. The component and total cross sections have been increased from 9 to 17. For a given element, the 17 cross sections are given in barns/atom and in cm^2/g. In LA-2237 the cross sections were obtained by interpolation of the Grodstein tables, but in the present tables many of the cross sections were calculated directly from theoretical and empirical equations. In addition to the 200 tables of cross sections, there are 8 tables in the Appendix giving: (I) the mass attenuation coefficients in cm^2/g for air, water, concrete, and sodium iodide; (II) the values of the constants used to calculate the photoelectric cross sections at the energy levels or absorption edges; (III) the K,L,M,N, and O atomic energy levels; (IV) the K x-ray energies obtained by subtracting the appropriate energy levels; (V) the L x-ray energies; (VI) the weighted average L and K x-ray energies; (VII) the relative intensities of the L and K x rays; and (VIII) the L and K fluorescence yields.

Because notation and terminology have not yet been standardized, we have adopted the following conventions in this report. When the probability of a photon interaction is expressed in units of barns/atom, it is called a cross section and denoted by σ. In units of cm^{-1}, it is called a linear attenuation coefficient and denoted by μ. In units of cm^2/g, it is called a mass attenuation coefficient and denoted by μ/ρ. The different kinds of interactions are denoted by subscripts: "τ" for photoelectric, "inc" for incoherent scatter, "coh" for coherent scatter, and "κ" for pair

production.

After a photoelectric, incoherent, or pair production interaction, photons (scattered, fluorescence, bremsstrahlung, or annihilation) may appear together with particles (electrons or positrons). The probability that photons appear after an interaction is called the "scatter" cross section and is denoted by the subscript "s." The probability that particles appear after an interaction is called the "absorption" cross section and is denoted by the subscript "a." The subscript "t" is used to denote total cross sections for particular interactions, and the subscript "tot" denotes a sum of individual cross sections.

Although the total, scatter, and absorption incoherent cross sections for a free electron are of less interest than those for a bound electron, both are included in the tables for purposes of comparison. Superscripts have been used to distinguish the free from the bound electron cross sections. Since the free electron cross sections are calculated from the Klein-Nishina equations, they are denoted by "KN." The bound electron incoherent cross sections are denoted by the superscript "BD."

Listed below are the photon interactions and the notation used in the cross section (barns/atom) tables of this report; the notation in LA-2237 is also given for the convenience of those who have used that report. The same subscripts and superscripts have been used in the mass attenuation coefficient (μ/ρ) tables. The cross sections are given to three significant figures in both the barns/atom and cm^2/g tables.

Photon Interaction	Present Notation	LA-2237 Notation
INCOHERENT FREE ELECTRON		
Total	$\sigma^{KN}_{inc,t}$	
Absorption	$\sigma^{KN}_{inc,a}$	σ_α
Scatter	$\sigma^{KN}_{inc,s}$	σ_I
INCOHERENT BOUND ELECTRON		
Total	$\sigma^{BD}_{inc,t}$	
Absorption	$\sigma^{BD}_{inc,a}$	
Scatter	$\sigma^{BD}_{inc,s}$	
COHERENT SCATTER	σ_{coh}	σ_c
PAIR PRODUCTION		
Nucleus	σ_{κ_n}	K_n
Electron	σ_{κ_e}	K_e
Total	$\sigma_{\kappa,t}$	K_T
Absorption	$\sigma_{\kappa,a}$	
PHOTOELECTRIC		
Total	$\sigma_{\tau,t}$	τ
Absorption	$\sigma_{\tau,a}$	
TOTALS		
Narrow beam	$\sigma_{tot,t}$	$\tau + \sigma_T + K_T$ ($\sigma_T = \sigma_\alpha + \sigma_I + \sigma_c$)
Narrow beam minus coherent	$\sigma_{tot,t - coh}$	
Absorption	$\sigma_{tot,a}$	$\tau + \sigma_\alpha + K_T$
Energy Absorption	$\sigma_{tot,en}$	

In the following sections, the method of obtaining each cross section is described and an estimate of the accuracy is given.

I. INCOHERENT (COMPTON) SCATTER CROSS SECTIONS

A. Free Electron

The total incoherent cross section for free electrons, $\sigma^{KN}_{inc,t}$, was calculated from the Klein-Nishina equation

$$\sigma^{KN}_{inc,t} = 2\pi r_o^2 \left\{ \frac{1+\alpha}{\alpha^2} \left[\frac{2(1+\alpha)}{1+2\alpha} - \frac{1}{\alpha} \ln(1+2\alpha) \right] + \frac{1}{2\alpha} \ln(1+2\alpha) \right\}, \quad (1)$$

where $\alpha = \frac{h\nu}{mc^2}$ is the initial photon energy in electron rest mass units. The values given in the tables include the Mork[15] combined radiative and double-Compton corrections.

The incoherent absorption cross section for a free electron, $\sigma^{KN}_{inc,a}$, was calculated from the Klein-Nishina equation

$$\sigma^{KN}_{inc,a} = 2\pi r_o^2 \left[\frac{2(1+\alpha)}{\alpha^2(1+2\alpha)} - \frac{1+3\alpha}{(1+2\alpha)^2} - \frac{(1+\alpha)(2\alpha^2-2\alpha-1)}{\alpha^2(1+2\alpha)^2} - \frac{4\alpha^2}{3(1+2\alpha)^3} - \left(\frac{1+\alpha}{\alpha^3} - \frac{1}{2\alpha} + \frac{1}{2\alpha^3} \right) \ln(1+2\alpha) \right]. \quad (2)$$

The incoherent scatter cross section for a free electron, $\sigma^{KN}_{inc,s}$, was calculated from the Klein-Nishina equation

$$\sigma^{KN}_{inc,s} = \pi r_o^2 \left[\frac{\ln(1+2\alpha)}{\alpha^3} + \frac{2(1+\alpha)(2\alpha^2-2\alpha-1)}{\alpha^2(1+2\alpha)^2} + \frac{8\alpha^2}{3(1+2\alpha)^3} \right]. \quad (3)$$

The cross sections are believed to be accurate within 1%.

B. Bound Electron

The total incoherent cross section for bound electrons, $\sigma^{BD}_{inc,t}$, was calculated from the equation

$$\frac{d\sigma^{BD}_{inc,t}}{d\Omega} = \tfrac{1}{2} r_o^2 Z \frac{1}{[(1+\alpha(1-\cos\theta)]^2} \left[1 + \cos^2\theta + \frac{\alpha^2(1-\cos\theta)^2}{1+\alpha(1-\cos\theta)} \right] S(q,Z)$$

$$= \frac{d\sigma^{KN}_{inc,t}}{d\Omega} S(q,Z) \quad (4)$$

by numerical integration over scattering angle θ. The differential form of the Klein-Nishina equation $\frac{d\sigma^{KN}_{inc,t}}{d\Omega}$, gives the probability that the photon is deflected at a given angle and transfers some momentum to the electron as though it were free. $S(q,Z)$ is the incoherent scattering function or probability that an atom will be raised to an excited or ionized state when the photon imparts a recoil momentum $\vec{q}$ to any of the atomic electrons.

The incoherent scattering functions used by Grodstein were obtained from the Thomas-Fermi model. Recently Cromer and Mann[17] calculated incoherent scattering functions for all 39 spherically symmetric free atoms using Hartree-Fock wave functions with exchange terms. Cromer has also calculated the matrix elements for the aspherical atoms B, C, O, F, Al, Si, Fe, and Ge from

ch scattering functions were calculated using the equations of Milberg and Brailsford,[18] and Freeman.[19-21] The incoherent scattering functions for the other aspherical atoms were obtained by interpolation. Since the incoherent scattering functions are not a smooth function of Z because of the irregularities in electron shell structure, the interpolated values may be in error by as much as 5%. The incoherent scattering functions of Cromer and Mann and the values interpolated from their data were used in Eq. 4 to calculate the total incoherent cross section for a bound electron.

The incoherent absorption cross section for a bound electron, $\sigma^{BD}_{inc,a}$, was calculated from the product $f_c\sigma^{BD}_{inc,t}$, where f_c is the average fraction of photon energy transferred to the medium as a result of Compton scatter. For energies less than 0.4 MeV, f_c was obtained from the ratio $\sigma^{KN}_{inc,a}/\sigma^{KN}_{inc,t}$. Berger gives values of f_c including bremsstrahlung losses in Table VII of her report[7] for 15 elements over the range 0.4 to 10 MeV. Allison gives values of $\sigma^{BD}_{inc,a}$ both with and without bremsstrahlung losses, in Table 3 of his report,[6] from which f_c can be obtained for six elements over the range 10 to 100 MeV. Berger's values of f_c from 0.4 to 10 MeV and Allison's values from 10 to 100 MeV were plotted both as a function of energy for a constant Z and as a function of Z for a constant energy. Smooth curves which gave the same value of f_c for a given element and energy on both plots were drawn through the points. The values of f_c used to calculate the incoherent absorption cross section for a bound electron from 0.4 to 100 MeV were interpolated from these curves. Since data for only a few elements were available, particularly above 10 MeV, the interpolated values may contain errors as large as 10%.

The incoherent scatter cross section for a bound electron, $\sigma^{BD}_{inc,s}$, was obtained by subtracting $\sigma^{BD}_{inc,a}$ from $\sigma^{BD}_{inc,t}$.

II. COHERENT (RAYLEIGH) SCATTER CROSS SECTIONS

The coherent scatter cross section, σ_{coh}, was calculated from the equation

$$\frac{d\sigma_{coh}}{d\Omega} = \tfrac{1}{2}r_o^2\,(1 + \cos^2\theta)\,\left[F(q,Z)\right]^2, \qquad (5)$$

by numerical integration over angle. The term $\frac{1}{2}r_o^2(1 + \cos^2\theta)$ is the cross section for Thomson scattering from a single electron. F is a form factor which represents the probability that the recoil momentum, $\vec{q}$, is transferred to the Z electrons of an atom without any energy absorption.

Grodstein in her calculations used form factors obtained from the Thomas-Fermi model with modifications for low Z materials based on the values of Nelms and Oppenheim.[22] Hanson et al.[16] have computed form factors for all elements 1 to 100 using Hartree-Fock-Slater wave functions. The coherent scattering cross section was calculated using the form factors of Hanson. The coherent cross sections are believed to be accurate within 3%.

III. PAIR PRODUCTION CROSS SECTIONS

Hubbell and Berger in Table 18 of NBS Report 8681[11] give the pair production cross sections in the field of an atomic nucleus, σ_{κ_n}, for 11 elements over a range of 1.5 to 100 MeV. Their cross sections were calculated using the Born approximation with

the Bethe-Heitler high energy approximation, and include radiative and screening corrections. The cross sections for other elements were obtained by plotting Hubbell and Berger's values of σ_{κ_n} both as a function of energy for a constant Z and as a function of Z for a constant energy. Smooth curves which gave the same value of σ_{κ_n} on both log-log plots were drawn through the given points. Values of σ_{κ_n} for each element were then interpolated from the curves. The nuclear-field pair production cross sections are probably accurate within 5%.

Hubbell and Berger in Table 20 of NBS Report 8681 give values which permit one to obtain the pair production cross section in the field of the atomic electrons, σ_{κ_e}, for 11 elements over a range of 3 to 100 MeV. Their cross sections were calculated using the combined Votruba-Borsellino-Ghizzetti theory, and include exchange, γ-e interaction, screening, and radiative corrections. The cross sections for other elements were obtained by plotting Hubbell and Berger's values of σ_{κ_e} both as a function of energy for a constant Z and as a function of Z for a constant energy. Smooth curves giving the same value of σ_{κ_e} on both log-log plots were drawn through the points. Cross sections for each element and energy were interpolated from the curves. The electron-field pair production cross sections are probably accurate within 10%.

The total pair production cross section, $\sigma_{\kappa,t}$, is the sum of the nuclear-field, σ_{κ_n}, and the electron-field, σ_{κ_e}, pair production cross sections.

The pair production absorption cross section, $\sigma_{\kappa,a}$, is obtained from the product $f_\kappa \sigma_{\kappa,t}$, where f_κ is the average fraction of photon energy transferred to the medium as a result of a pair production event. Values of f_κ which include bremsstrahlung and positron annihilation losses are given by Berger in Tables IX and X of her report[7] for 15 elements over a range of 1.5 to 10 MeV. Allison in Table 4 of his report[6] gives values of $\sigma_{\kappa,t}$ and $\sigma_{\kappa,a}$, which do not include positron annihilation corrections, for seven elements over the range 15 to 100 MeV. Berger's and Allison's values were plotted both as a function of energy for constant Z and as a function of Z for constant energy. Smooth curves giving the same value of f_κ on both log-log plots were put through the points, and values for other elements were interpolated. Since data for only a few elements were available and positron annihilation losses were not included above 10 MeV, the pair production absorption cross sections may contain errors as large as 20%.

IV. PHOTOELECTRIC CROSS SECTIONS

A. Total

The total photoelectric cross section $\sigma_{\tau,t}$, was calculated by Grodstein[3] using theoretical equations. McGinnies[5] compared the theoretical to experimental values and found large differences, particularly below the K edges. Recent revisions of the Grodstein tables by Davisson[8] and Hubbell and Berger[11] have been based primarily on experimental measurements and the theoretical calculations of Pratt et al.[10,13] and Hultberg et al.[9,12]

In the preparation of this report, we made an extensive and critical study of the experimental and calculated photoelectric cross sections. Although very few direct photoelectric cross-section measurements have been made, they can be derived from narrow beam, total cross-section measurements by subtracting the incoherent,

coherent, and pair production cross sections. From the bibliographies of Glocker,[23] Stainer,[24] and Toms[25] and the references given by Hubbell and Berger,[11] many of the narrow beam, total cross-section measurements made prior to 1966, such as those of Laubert,[26] Deslattes,[27] Hopkins,[28] and Wiedenbeck,[29], may be found. In addition, there have been recent measurements, calculations, and tabulations by Leroux,[30] Henke,[31] Cooke and Stewardson,[32] Petrassi,[33] Bearden,[34] Heinrich,[35] Barlett and Donahue,[36] McCrary et al.,[37] McMaster et al.,[38] and Carter et al.[39]

All the measured and calculated photoelectric cross sections were plotted on log-log paper both as a function of energy for a constant Z and as a function of Z for a constant energy. It became apparent that many of the older values and some of the more recent ones should not be included. The selected photoelectric cross sections were replotted before smooth curves were drawn through the points. The curves were extrapolated to the K, L, M, and N absorption edges. A log-log plot of the photoelectric cross sections at the upper and lower K, L_I - L_{III}, M_I - M_V, and upper N_I edge as a function of Z revealed that a smooth curve could be put through the points for each upper and lower edge. Furthermore, the smooth curves could be described by an expression of the form

$$\sigma_{\tau(\text{edge})} = k\left[\frac{Z}{\alpha(\text{edge})}\right]^n \text{ barns/atom}, \qquad (6)$$

where $\sigma_{\tau(\text{edge})}$ is the total photoelectric cross section at an upper or lower K, L, M, or N edge; $\alpha(\text{edge})$ is the energy of the edge in electron rest mass units; and k and n are constants. The values of k and n used for each upper and lower edge are given in Table II of the Appendix. The exponent, n, varies from 1.5 to 2.04, and the constant, k, is of the order of $\pi r_o^2/137 = 1.82 \times 10^{-3}$. The total photoelectric cross sections at the absorption edges given in the tables were calculated from Eq. (6) using the constants in Table II.* The energies of the K, L, M, and N edges used in these calculations are given in Table III of the Appendix. They were obtained by smoothing the edge energies given in the literature[40-43] with particular attention given to the recent compilation of Bearden and Burr.[44]

The selected narrow beam total cross sections were also plotted on log-log paper as a function of energy for a constant Z. The data indicated that between K, L, and M edges the selected cross sections could be connected by straight lines. To obtain the narrow beam total cross section at the edges, the photoelectric cross section at each edge calculated from Eq. (6) was added to the calculated coherent and incoherent edge cross sections. The narrow beam total cross sections at the edges were plotted on log-log paper as a function of energy and connected by straight lines. The narrow beam values between the edges were then read from the lines. The photoelectric cross sections between the K, L, and M, edges given in the tables were obtained by subtracting the calculated coherent and incoherent values from the narrow beam totals.

Above the K edge, log-log plots of the narrow beam total cross section as a function of energy for constant Z were not

*Hubbell and Berger on p. 28 of NBS Report 8681 point out that the high energy side of an absorption edge exhibits fine structure, and that the photoelectric cross section for light elements may oscillate by as much as a factor of five.

linear. However, when the photoelectric cross section was plotted as a function of Z for a constant energy, equations of the form

$$\sigma_\tau(\text{const } E) = k\left[\frac{Z}{\alpha}\right]^n \text{ barns/atom}, \qquad (7)$$

could be used to calculate the photoelectric cross section over a limited range of atomic numbers and energies. Equations of this form were used as a quide in drawing the smooth curves through the selected experimental and calculated points. We required that the smooth curves give the same values of the photoelectric and narrow beam total cross sections when plotted both as a function of Z for constant energy and as a function of energy for constant Z.

As experimental techniques and theoretical calculations are improved, it would not be surprising to learn that the total photoelectric cross sections contain large errors. For example, the calculated and measured cross sections for hydrogen and helium differ by an order of magnitude.

The accuracy of the total photoelectric cross section varies with energy. The values of k and n in Eq. (6) are based on very few calculated and measured points from 0.001 MeV to the L_I edge, so errors as large as 100% in this region might be expected. Between the L_I and K edges, the total photoelectric cross sections are probably accurate within 25%. Between the K edge and 0.2 MeV, the total photoelectric cross sections are probably accurate within 10%. Between 0.2 and 100 MeV, errors may be as large as 20%.

B. Absorption

The photoelectric absorption cross section, $\sigma_{\tau,a}$, is obtained from the product $\sigma_{\tau,t} f_\tau$, where f_τ is the average fraction of photon energy transferred to the medium as a result of photoelectric absorption. If bremsstrahlung is neglected, and according to Berger[7] it reduces f_τ by at most 2%, then f_τ is given approximately by the equations

$$f_{\tau_K} = 1 - \frac{\sigma_{\tau_K}}{\sigma_{\tau,t}} \frac{\omega_K \bar{E}_K}{h\nu}, \qquad (8)$$

$h\nu$ above the K edge;

$$f_{\tau_L} = 1 - \frac{\sigma_{\tau_L}}{\sigma_{\tau,t}} \frac{\omega_L \bar{E}_L}{h\nu}, \qquad (9)$$

$h\nu$ between the K and L_{III} edges;

$$f_{\tau_{M,N, \text{ etc.}}} = 1, \qquad (10)$$

$h\nu$ below the L_{III} edge.

The energy of the incident photon is represented by $h\nu$.

The fluorescence K-shell yield, ω_K, and the mean L-shell yield, ω_L are given in Table VIII of the Appendix. They were obtained by smoothing the data in the literature,[43, 45, 46] with particular attention given to the recent compilation by Fink et al.[47]

The weighted average energies of the K fluorescence photons, $\bar{E}_K$, and L fluorescence photons, $\bar{E}_L$, are given in Table VI of the Appendix. The $\bar{L}_{I,II,III}$ column gives the weighted average fluorescence energy for $h\nu$ between the K and L_I edges; the $\bar{L}_{II,III}$ column, the average energy for $h\nu$ between the L_I and L_{II} edges; and the $\bar{L}_{III}$ column, the average energy for $h\nu$ between the L_{II} and L_{III} edges. Table VI also

gives the weighted average energy of the K_α and K_β lines when considered separately.

The weighted average energies were calculating using the K x-ray energies given in Table IV, the L x-ray energies in Table V, and the K and L relative intensities given in Table VII of the Appendix. The K and L fluorescence x-ray energies were obtained by subtracting the appropriate edge energies given in Table III. With a few exceptions, the K and L x-ray energies given in Tables IV and V are within 10 eV of the energies given for the fluorescence lines in the recent compilation by Bearden.[48] The relative intensities given in Table VII were obtained from a smoothing of the data in the literature,[42,43,49] and should be regarded merely as rough approximations. For example, the L line intensities are all assumed to be independent of Z, although measurements have indicated the expected Z-dependence for some of them.

The photoelectric cross section for the K shell, σ_{τ_K}, has been calculated for a few elements.[9,10,14,50,51] Davisson[52] gives the ratio for $\sigma_{\tau,t}/\sigma_{\tau_K}$ at the K edge for 21 elements. Hubbell and Berger[11] represent this ratio by the empirical equation

$$\sigma_{\tau,t} \Big/ \sigma_{\tau_K} = 1 + 0.01481 \ln^2 Z - 0.000788 \ln^3 Z. \qquad (11)$$

In the calculation of f_τ above the K edge from Eq. (8), we assumed that the ratio $\sigma_{\tau_K} / \sigma_{\tau,t}$ is independent of energy and is given by the reciprocal of Eq. (11).

The photoelectric cross section for the L shell, σ_{τ_L}, has been calculated for only a few elements.[14,50,51] In calculating f_τ between the K and L edges from Eq. (9), we assumed that the ratio $\sigma_{\tau_L} / \sigma_{\tau,t}$ is independent of energy and is given by the following empirical equation:

$$\sigma_{\tau_L} \Big/ \sigma_{\tau,t} = 1 - 2.5 \times 10^{-7} Z^3. \qquad (12)$$

Since $\sigma_{\tau,a}$ is the product of f_τ and $\sigma_{\tau,t}$, the photoelectric absorption cross section has the same uncertainties as the total photoelectric cross section plus the additional uncertainty in f_τ, which may be as much as 10%.

V. TOTAL CROSS SECTIONS

There are at least five total cross sections in general use. In the terminology of Hubbell and Berger,[11] these totals are the narrow beam total cross section, the narrow beam total cross section without coherent scatter, the total absorption cross section, the total energy-transfer cross section, and the total energy-absorption cross section. All of these are given in the tables except the total energy-transfer cross section which allows for the escape of Compton-scattered, fluorescence, and annihilation photons, but not bremsstrahlung. The total energy-absorption cross section allows for the escape of all secondary photons, including bremsstrahlung. The total absorption cross section allows only for the escape of the Compton-scattered photons. The totals do not include the cross sections for the photonuclear effect.

The narrow beam total cross section, $\sigma_{tot,t}$, was obtained by summing the bound-electron total incoherent scatter, $\sigma^{BD}_{inc,t}$; the coherent scatter, σ_{coh}; the total pair production, $\sigma_{\kappa,t}$; and the total photoelectric, $\sigma_{\tau,t}$, cross sections. This total

cross section is the one measured in narrow beam geometry in which both source and detector are highly collimated.

The total cross section without coherent scatter, $\sigma_{tot,t - coh}$, is often used in shielding calculations and in gamma-ray transport theory. It was obtained by subtracting the coherent scatter from the narrow beam total cross section.

The total absorption cross section, $\sigma_{tot,a}$, is useful in reactor gamma-ray heating calculations. It was obtained by the customary method of adding the free-electron incoherent absorption, $\sigma^{KN}_{inc,a}$, to the toal pair production $\sigma_{\kappa,t}$, and total photoelectric, $\sigma_{\tau,t,}$ cross sections. In certain calculations, the bound-electron incoherent cross section without bremsstrahlung is added to the total pair production and photoelectric cross sections. For this purpose, one can use $\sigma^{BD}_{inc,a}$ below 0.4 MeV where bremsstrahlung is negligible, and $\sigma^{KN}_{inc,a}$ above 0.4 MeV where the total incoherent scatter for a free and bound electron is the same within 3%.

The total energy-absorption cross section, $\sigma_{tot,en}$, is useful in absorbed-dose and radiation-effect determinations. It was obtained by summing the bound electron incoherent absorption, $\sigma^{BD}_{inc,a}$; the pair production absorption, $\sigma_{\kappa,a}$; and the photoelectric absorption, $\sigma_{\tau,a}$, cross sections.

The accuracy of the totals varies with energy and depends upon which interaction dominates. In the region where the photoelectric interaction dominates, there may be errors as large as 100% between 0.001 MeV and the L_I edge, 25% between the L_I and K edges, and 10% between the K edge and 0.2 MeV. In the region where the incoherent interaction dominates, 0.2 to 5 MeV, the totals appear to be accurate within 5%. In the region where pair production dominates and where photonuclear cross sections are omitted, the errors may be as large as 15%. In addition, the total cross sections for hydrogen and helium below 0.01 MeV may contain order of magnitude errors.

ACKNOWLEDGMENTS

The authors express their appreciation to Reva Castleberry for typing the manuscript and to Bruce J. Krohn and Albert W. Savage, Jr., for the many hours they spent plotting points, searching for references, and tabulating input data.

REFERENCES

1. White, G. R., "X-ray Attenuation Coefficients from 10 keV to 100 MeV," NBS Report 1003, 1952.
2. Morgan, R. H., Handbook of Radiology, The Year Book Publishers, Inc., Chicago, 1955, pp. 99-117.
3. Grodstein, G. W., "X-ray Attenuation Coefficients from 10 keV to 100 MeV", NBS Circular 583, 1957.
4. Storm E., Gilbert, H. E., and Israel, H., "Gamma Ray Absorption Coefficients for Elements 1 through 100 Derived from the Theoretical Values of the National Bureau of Standards," Los Alamos Scientific Laboratory Report LA-2237, 1958.
5. McGinnies, R. T., "X-ray Attenuation Coefficients from 10 keV to 100 MeV," Supplement to NBS Circular 583, 1959.
6. Allison, J. W., "Gamma-Radiation Absorption Coefficients of Various Materials Allowing for Bremsstrahlung and other Secondary Radiations," Austral. J. Phys. 14, 443-468 (1961).

7. Berger, R. T., "The X- or Gamma-Ray Energy Absorption or Transfer Coefficient: Tabulations and Discussion," Rad. Res. 15, 1-29 (1961).
8. Davisson, C. M., K. Seigbahn, Ed., Alpha-, Beta-, and Gamma-Ray Spectroscopy, North-Holland Publ. Co., Amsterdam, 1965, Vol. 1, Ch. 2 and App. 1.
9. Hultberg, S., Nagel, B., and Olsson, P., "Relativistic Differential and Total K-shell Photoelectric Cross-Sections and Photoelectron Polarizations," Arkiv f. Fysik 20, 555-557 (1961).
10. Pratt, R. H., Levee, R. D., Pexton, R. L., and Aron, W., "K-shell Photoelectric Cross Sections from 200 keV to 2 MeV," Phys. Rev. 134, A898-A915 (1964).
11. Hubbell, J. H., and Berger, M. H., Photon Attenuation and Energy Absorption Coefficients. Tabulations and Discussions," NBS Report 8681 (Second edition) (1961).
12. Hultberg, S., Nagel, B., and Olsson, P., (to be published in Arkiv f. Fysik).
13. Pratt, R. H., and Schmickley, R. (to be published).
14. Rakavy, G., and Ron, A., "Total Cross Sections of the Photoelectric Effect for Uranium," Phys. Letters 19, 207-208 (1965).
15. Mork, K. J., (to be published in Phys. Rev.).
16. Hanson, H. P., Herman, F., Lea, J. D., and Skillman, S., "HFS Atomic Scattering Factors," Acta Cryst. 17, 1040-1044 (1964).
17. Cromer, D. T., and Mann, J. B. "Compton Scattering Factors for Spherically Free Atoms," LA-DC-8819 (1967).
18. Milbert, M. E., and Brailsford, A. D., "The Atomic Incoherent Scattering Intensities of Boron, Oxygen, and Carbon," Acta Cryst. 11,672-673 (1958).
19. Freeman, A. J., "Compton Scattering of X-rays from Aluminum," Phys. Rev. 113, 176-178 (1959).
20. Freeman, A. J., "X-ray Incoherent Scattering Functions for Non-Spherical Charge Distributions. II. Ti^{+}, V^{+2}, Mn^{+2}, Mn and Fe," Acta Cryst. 13, 618-623 (1960).
21. Freeman, A. J., "X-ray Incoherent Scattering Functions for Non-Spherical Charge Distributions: N, N^{-}, O^{-}, O, O^{+}, O^{+2}, O^{+3}, F, F^{-}, Si^{+4}, Si^{+3}, Si, and Ge," Acta Cryst. 12, 909-926 (1959).
22. Nelms, A. T., and Oppenheim, I., "Data on the Atomic Form Factor: Computation and Survey," J. Res. Natl. Bur. Stds. 55, 53-62 (1955).
23. Glocker, R., "Absorption von Rotgenstrahlen," tables in Landolt-Börnstein Zahlenwerte und Funktionen, A. Eucken, Ed., Vol. 1 pt. 1, 6th ed., Springer-Verlag, Heidelberg, 1950, pp. 314-322.
24. Stainer, H. M., "X-ray Mass Absorption Coefficients, A Literature Survey," U. S. Bur. of Mines Info. Circular 8166, 1963.
25. Toms, M. E., U. S. Naval Res. Lab., Bibl. No. 22, 1963.
26. Laubert, S., "Die Massenschwächungs-, Photoabsorptions- und Streukoeffinzienten monochromatischer Röntgen-Strahlen von Ni(28), Cu(29), Ag(47), Cd(48), Sn(50), Ta(73), W(74), Ir(77), Pt(78), Au(79), und Pb(82)," Ann. Physik, 40, Ser. 5, No. 8, 553-578 (1941).
27. Deslattes, R. D., "An Experimental Study of X-Ray Attenuation Coefficients, 8-30 keV," AFOSR Rept. TN-58-784,

76 pp., 1958, ASTIA, Doc. 202009.

28. Hopkins, J. I., "Low-energy X-Ray Attenuation Measurements for Elements of Low Atomic Number," J. Appl. Phys. 30, No. 2, 185-187 (1959).
29. Wiedenbeck, M., "Total X-Ray Attenuation Coefficients from 40 keV to 412 keV," Phys. Rev. 126, 1009-1010 (1962).
30. Leroux, J., "Method for Finding Mass Absorption Coefficients by Empirical Equations and Graphs," Advances in X-Ray Analysis, Vol. V, Plenum Press, New York, 1961, pp. 153-160.
31. Henke, B. L., Advances in X-Ray Analysis, Vol. VII, Plenum Press, New York, 1963, pp. 460-488.
32. Cooke, B. A., and Stewardson, E. A., "The Absorption of X-Rays in the Range 7-17 A by Be, Mg, Al, Cu, and Ag," Brit. J. Appl. Phys., 15, 1315-1319 (1964).
33. Petrassi, E., "Table of X-Ray Mass Absorption Coefficients," in Quantitative Electron Microprobe Analysis, R. Thersen, Ed., Springer Verlag, Berlin, Heidelberg, New York, 1965, p. 32.
34. Bearden, A. J., "X-Ray Photoeffect Cross-Sections in Low- and Medium-Z Absorbers for the Energy Range 852 eV to 40 keV," J. Appl. Phys. 37, No. 4, 1681-1692 (1966).
35. Heinrich, K. F. J., "X-Ray Absorption Uncertainty" in The Electron Microprobe, Proc. of an Electron Probe Analysis Symposium, McKinley, T. D., Heinrich, K. F. J., and Wittry, D. B., Eds. Wiley & Sons, New York, 1966, pp. 296-377.
36. Barlett, R. H., and Donahue, D. J., "Total Attenuation Coefficients for 5- to 11- MeV Photons," Phys. Rev. 137, A523-526 (1965).
37. McCrary, J. H., Plassmann, E. H., Puckett, J. M., Conner, A. L., and Zimmermann, G. W., "X-Ray Attenuation Coefficient Measurements," Los Alamos Scientific Laboratory Report LA-DC-7916, 1966.
38. McMaster, W. H., Kerr Del Grande, N., Mallett, J. H., Scofield, N. E., Cahill, R., and Hubbell, J. H., "Compilation of X-ray Cross Sections," UCRL-50174, Section II, 1967.
39. Carter, R. W., Rohrer, R. H. Carlton, W. H. and Dyer, G. R., "Low Energy X-Ray Mass Absorption Coefficients from 1.49 to 15.77 keV for Scandium, Titanium, Vanadium, Iron, Cobalt, Nickel, and Zinc," Health Phys. 13, 593-599 (1966).
40. Hill, R. D., Church, E. L., and Mihelich, J. W., "The Determination of Gamma-Ray Energies from Beta-Ray Spectroscopy and a Table of Critical X-ray Absorption Energies," Rev. Sci. Instr. 23, No. 10, 523-528 (1952).
41. Fine, S., and Hendee, C. F., "X-Ray Critical Absorption and Emission Energies in keV," Nucleonics 13, No. 3, 36-37 (1955).
42. Sandström, A. E., Handbuch der Physik S. Flügge, Ed. Vol. 30, Springer-Verlag, Berlin, 1957, pp. 156-245.
43. Blokhin, M. A., The Physics of X-Rays, 2nd edition, State Publishing House of Technical-Theoretical Literature, Moscow, 1957, Appendix.
44. Bearden, J. A., and Burr, A. F., "Reevaluation of X-ray Atomic Energy Levels," Rev. Mod. Phys. 39, No. 1, 125-142 (1967).
45. Broyles, C. D., Thomas, D. A., and Haynes, S. K., "The Measurement and Interpretation of the K Auger Intensities of Sn^{113}, Cs^{137}, and Au^{198}",

Phys. Rev. 89, 715-724 (1953).

46. Bergstrom, I., and Nordling, C., Alpha-, Beta-, and Gamma-Ray Spectroscopy, Vol. 2, K. Siegbahn, North-Holland Publ. Co., 1965, Ch. XXV(A).

47. Fink, R. W., Jopson, R. C., Mark, H., and Swift, C. D., "Atomic Fluorescence Yields, "Rev. Mod. Phys. 38, No. 3, 513-540 (1966).

48. Bearden, J. A., "X-Ray Wavelengths," Rev. Mod. Phys. 39, No. 1, 86-99 (1967).

49. Taylor, G. R., and Payne, W. B.,"Retardation of K X-Ray Relative Intensities, "Phys. Rev. 118, 1549-1551 (1960).

50. Matese, J. J., and Johnson, W. R., "Influence of Screening on the Atomic Photoeffect, " Phys. Rev. 140, A1-A7 (1965).

51. Gavrila, M., "Relativistic L-shell Photoeffect," Phys. Rev. 124, 1132-1141 (1961).

52. Davisson, C. M., Alpha-, Beta, and Gamma-Ray Spectroscopy, K. Seigbahn, Ed., North-Holland Publ. Co., Amsterdam, 1965, Vol. 1, App. 1.

APPENDIX

Supplementary Tables

Table I

Mass Attenuation Coefficients for Air, Water, Concrete, and Sodium Iodide

AIR
(cm^2/g)

E (MeV)	$(\frac{\mu}{\rho})^{KN}_{inc,t}$	$(\frac{\mu}{\rho})^{BD}_{inc,t}$	$(\frac{\mu}{\rho})^{KN}_{inc,a}$	$(\frac{\mu}{\rho})^{BD}_{inc,a}$	$(\frac{\mu}{\rho})^{KN}_{inc,s}$	$(\frac{\mu}{\rho})^{BD}_{inc,s}$	$(\frac{\mu}{\rho})_{coh}$	$(\frac{\mu}{\rho})_{\kappa_n}$	$(\frac{\mu}{\rho})_{\kappa_e}$	$(\frac{\mu}{\rho})_{\kappa,t}$	$(\frac{\mu}{\rho})_{\kappa,a}$	$(\frac{\mu}{\rho})_{r,t}$	$(\frac{\mu}{\rho})_{r,a}$	$(\frac{\mu}{\rho})_{tot,t}$	$(\frac{\mu}{\rho})_{tot,t-coh}$	$(\frac{\mu}{\rho})_{tot,a}$	$(\frac{\mu}{\rho})_{tot,en}$
.001	.199	.0105	.000388	.0000205	.199	.0105	1.35					3460.	3460.	3470.	3460.	3460.	3460.
.0015	.199	.0213	.000580	.0000624	.198	.0213	1.25					1090.	1090.	1100.	1090.	1090.	1090.
.002	.198	.0336	.000769	.000130	.198	.0335	1.12					482.	482.	483.	482.	482.	482.
.003	.198	.0571	.00115	.000331	.197	.0567	.881					152.	152.	153.	152.	152.	152.
Ar K .003203	.198	.0613	.00115	.000377	.197	.0609	.847					127.	127.	128.	127.	127.	127.
												144.	143.	145.	144.	144.	143.
.004	.197	.0775	.00152	.000596	.195	.0771	.688					74.9	74.2	75.7	75.0	74.9	74.2
.005	.196	.0929	.00188	.000891	.194	.0921	.545					38.5	38.2	39.1	38.6	38.5	38.2
.006	.195	.105	.00224	.00120	.193	.104	.440					22.2	22.0	22.7	22.3	22.2	22.0
.008	.194	.121	.00293	.00183	.191	.119	.309					9.21	9.16	9.44	9.33	9.22	9.16
.01	.192	.132	.00361	.00247	.189	.129	.233					4.59	4.56	4.95	4.72	4.59	4.57
.015	.189	.147	.00524	.00407	.184	.143	.137					1.25	1.25	1.54	1.40	1.26	1.25
.02	.186	.156	.00670	.00563	.179	.150	.0913					.497	.495	.744	.653	.503	.501
.03	.180	.163	.00936	.00846	.170	.154	.0483					.131	.131	.342	.293	.140	.139
.04	.174	.163	.0116	.0109	.162	.152	.0295					.0508	.0507	.243	.214	.0624	.0616
.05	.169	.161	.0136	.0130	.155	.148	.0199					.0245	.0244	.205	.186	.0381	.0374
.06	.164	.159	.0154	.0149	.149	.144	.0143					.0135	.0134	.186	.172	.0288	.0283
.08	.156	.152	.0182	.0178	.137	.134	.00837					.00529	.00528	.166	.158	.0235	.0231
.1	.148	.146	.0204	.0201	.128	.126	.00549					.00254	.00254	.154	.148	.0230	.0227
.15	.134	.132	.0242	.0240	.109	.108	.00250					.000694	.000694	.135	.133	.0249	.0247
.2	.122	.121	.0264	.0263	.0958	.0953	.00143					.000278	.000278	.123	.122	.0267	.0265
.3	.106	.106	.0286	.0286	.0777	.0773	.000650					.0000762	.0000762	.107	.106	.0287	.0287
.4	.0953	.0950	.0295	.0294	.0657	.0654	.000376					.0000098	.0000098	.0953	.095	.0295	.0294
.5	.0868	.0868	.0296	.0298	.0571	.0571	.000247					.0000051	.0000051	.0870	.0868	.0296	.0298
.6	.0803	.0803	.0295	.0295	.0507	.0507	.000174					.0000031	.0000031	.0805	.0803	.0295	.0295
.8	.0705	.0705	.0289	.0287	.0417	.0419	.0000975					.0000015	.0000015	.0706	.0705	.0289	.0287
1.	.0636	.0636	.0279	.0278	.0356	.0357	.0000592					.0000009	.0000009	.0636	.0636	.0279	.0278
1.5	.0515	.0515	.0255	.0253	.0261	.0262	.0000014	.0000968		.0000968	.0000309	.0000004	.0000004	.0516	.0516	.0256	.0254
2.	.0438	.0438	.0234	.0232	.0207	.0207	.0000008	.000387		.000387	.000189	.0000003	.0000003	.0442	.0442	.0237	.0234
3.	.0346	.0346	.0200	.0197	.0146	.0148	.0000003	.00111	.0000121	.00112	.000740			.0357	.0357	.0211	.0205
4.	.0289	.0289	.0176	.0173	.0114	.0116		.00182	.0000498	.00187	.00139			.0308	.0308	.0194	.0187
5.	.0250	.0250	.0157	.0154	.00928	.00959		.00244	.0000970	.00253	.00202			.0275	.0275	.0182	.0174
6.	.0221	.0221	.0142	.0139	.00786	.00817		.00297	.000147	.00312	.00260			.0252	.0252	.0173	.0165
8.	.0180	.0180	.0120	.0117	.00601	.00634		.00388	.000253	.00414	.00361			.0222	.0222	.0162	.0153
10.	.0154	.0154	.0105	.0102	.00486	.00522		.00461	.000351	.00495	.00443			.0203	.0203	.0155	.0146
15.	.0114	.0114	.00808	.00763	.00330	.00377		.00601	.000545	.00656	.00601			.0178	.0179	.0146	.0136
20.	.00914	.00914	.00666	.00612	.00250	.00303		.00710	.000701	.00779	.00715			.0160	.0169	.0144	.0133
30.	.00666	.00666	.00498	.00440	.00168	.00225		.00860	.000936	.00954	.00854			.0162	.0162	.0145	.0129
40.	.00529	.00529	.00402	.00342	.00127	.00186		.00960	.00110	.0107	.00929			.0160	.0160	.0147	.0127
50.	.00442	.00442	.00340	.00280	.00102	.00162		.0104	.00124	.0116	.00978			.0160	.0160	.0150	.0126
60.	.00380	.00380	.00295	.00234	.000850	.00146		.0110	.00135	.0123	.0101			.0161	.0161	.0152	.0124
80.	.00300	.00300	.00236	.00176	.000640	.00124		.0119	.00151	.0134	.0104			.0164	.0164	.0157	.0122
100.	.00249	.00249	.00198	.00138	.000512	.00111		.0126	.00164	.0142	.0107			.0167	.0167	.0162	.0121

Composition by weight: 0.755 N, 0.232 O, 0.013 Ar.

Table I (cont'd)

Mass Attenuation Coefficients for Air, Water, Concrete, and Sodium Iodide

WATER
(cm^2/g)

E (MeV)	$(\frac{\mu}{\rho})^{KN}_{inc,t}$	$(\frac{\mu}{\rho})^{BD}_{inc,t}$	$(\frac{\mu}{\rho})^{KN}_{inc,a}$	$(\frac{\mu}{\rho})^{BD}_{inc,a}$	$(\frac{\mu}{\rho})^{KN}_{inc,s}$	$(\frac{\mu}{\rho})^{BD}_{inc,s}$	$(\frac{\mu}{\rho})_{coh}$	$(\frac{\mu}{\rho})_{\kappa_n}$	$(\frac{\mu}{\rho})_{\kappa_e}$	$(\frac{\mu}{\rho})_{\kappa,t}$	$(\frac{\mu}{\rho})_{\kappa,a}$	$(\frac{\mu}{\rho})_{\tau,t}$	$(\frac{\mu}{\rho})_{\tau,a}$	$(\frac{\mu}{\rho})_{tot,t}$	$(\frac{\mu}{\rho})_{tot,t-coh}$	$(\frac{\mu}{\rho})_{tot,a}$	$(\frac{\mu}{\rho})_{tot,en}$
.001	.222	.0135	.000431	.0000263	.221	.0135	1.37					4020.	4020.	4020.	4020.	4020.	4020.
.0015	.221	.0271	.000644	.0000789	.221	.0270	1.27					1280.	1280.	1280.	1280.	1280.	1280.
.002	.221	.0422	.000857	.000164	.220	.0420	1.16					566.	566.	567.	566.	566.	566.
.003	.220	.0705	.00128	.000408	.219	.0700	.925					179.	179.	180.	179.	179.	179.
.004	.219	.0942	.00169	.000723	.217	.0936	.732					77.0	77.0	77.8	77.1	77.0	77.0
.005	.218	.112	.00209	.00108	.216	.111	.581					39.5	39.5	40.2	39.6	39.5	39.5
.006	.217	.126	.00249	.00144	.215	.125	.468					22.8	22.8	23.4	22.9	22.8	22.8
.008	.216	.144	.00327	.00219	.212	.142	.326					9.56	9.56	10.0	9.68	9.54	9.54
.01	.214	.155	.00402	.00291	.210	.153	.242					4.72	4.72	5.12	4.87	4.72	4.72
.015	.210	.170	.00582	.00470	.205	.165	.140					1.28	1.28	1.59	1.45	1.29	1.29
.02	.207	.178	.00745	.00642	.199	.171	.0924					.499	.499	.769	.676	.506	.505
.03	.200	.183	.0104	.00952	.189	.174	.0489					.131	.131	.363	.314	.141	.140
.04	.194	.183	.0129	.0122	.181	.171	.0300					.0499	.0499	.263	.233	.0628	.0620
.05	.188	.180	.0151	.0146	.173	.166	.0202					.0238	.0238	.224	.204	.0389	.0383
.06	.182	.177	.0171	.0166	.166	.160	.0145					.0131	.0131	.204	.190	.0302	.0296
.08	.173	.170	.0203	.0199	.153	.150	.00847					.00502	.00502	.183	.175	.0253	.0249
.1	.165	.163	.0228	.0224	.142	.140	.00556					.00240	.00240	.171	.165	.0252	.0248
.15	.148	.147	.0269	.0268	.121	.121	.00254					.000649	.000649	.151	.148	.0276	.0274
.2	.136	.135	.0294	.0292	.107	.106	.00145					.000256	.000256	.137	.135	.0297	.0295
.3	.118	.118	.0319	.0318	.0865	.0862	.000659					.0000699	.0000699	.119	.118	.0319	.0319
.4	.106	.106	.0328	.0328	.0732	.0732	.000382							.106	.106	.0328	.0328
.5	.0966	.0966	.0330	.0331	.0636	.0636	.000251							.0969	.0966	.0330	.0331
.6	.0895	.0895	.0329	.0328	.0565	.0565	.000178							.0896	.0895	.0329	.0328
.8	.0786	.0786	.0321	.0319	.0464	.0468	.000101							.0787	.0786	.0321	.0319
1.	.0707	.0707	.0311	.0310	.0395	.0397	.0000622							.0707	.0707	.0311	.0310
1.5	.0573	.0573	.0284	.0282	.0290	.0291		.0000966		.0000966	.0000308			.0574	.0574	.0285	.0283
2.	.0489	.0489	.0260	.0259	.0230	.0231		.000384		.000384	.000188			.0493	.0493	.0264	.0260
3.	.0385	.0385	.0222	.0220	.0163	.0165		.00111	.0000135	.00112	.000741			.0396	.0396	.0233	.0227
4.	.0322	.0322	.0195	.0193	.0127	.0129		.00183	.0000551	.00188	.00141			.0341	.0341	.0214	.0207
5.	.0278	.0278	.0174	.0172	.0103	.0106		.00242	.000108	.00253	.00202			.0303	.0303	.0200	.0192
6.	.0246	.0246	.0158	.0155	.00874	.00905		.00297	.000164	.00313	.00261			.0277	.0277	.0189	.0181
8.	.0201	.0201	.0134	.0130	.00669	.00703		.00387	.000282	.00416	.00364			.0242	.0242	.0176	.0167
10.	.0171	.0171	.0117	.0113	.00543	.00576		.00459	.000391	.00497	.00445			.0221	.0221	.0167	.0158
15.	.0127	.0127	.00899	.00855	.00367	.00412		.00601	.000607	.00660	.00604			.0193	.0193	.0156	.0146
20.	.0102	.0102	.00740	.00689	.00278	.00329		.00711	.000782	.00791	.00718			.0181	.0181	.0153	.0141
30.	.00740	.00740	.00552	.00497	.00187	.00243		.00853	.00104	.00958	.00851			.0170	.0170	.0151	.0135
40.	.00590	.00590	.00448	.00390	.00141	.00199		.00957	.00123	.0108	.00931			.0167	.0167	.0153	.0132
50.	.00490	.00490	.00378	.00318	.00113	.00172		.0104	.00138	.0117	.00983			.0166	.0166	.0155	.0130
60.	.00422	.00422	.00328	.00268	.000946	.00154		.0109	.00150	.0124	.0101			.0166	.0166	.0157	.0128
80.	.00334	.00334	.00262	.00203	.000711	.00131		.0118	.00168	.0135	.0105			.0168	.0168	.0161	.0125
100.	.00277	.00277	.00220	.00161	.000573	.00116		.0125	.00183	.0144	.0107			.0171	.0171	.0166	.0123

Table I (cont'd)

Mass Attenuation Coefficients for Air, Water, Concrete, and Sodium Iodide

CONCRETE
(cm^2/g)

E (MeV)	$(\frac{\mu}{\rho})^{KN}_{inc,t}$	$(\frac{\mu}{\rho})^{BD}_{inc,t}$	$(\frac{\mu}{\rho})^{KN}_{inc,a}$	$(\frac{\mu}{\rho})^{BD}_{inc,a}$	$(\frac{\mu}{\rho})^{KN}_{inc,s}$	$(\frac{\mu}{\rho})^{BD}_{inc,s}$	$(\frac{\mu}{\rho})_{coh}$	$(\frac{\mu}{\rho})_{\kappa_n}$	$(\frac{\mu}{\rho})_{\kappa_e}$	$(\frac{\mu}{\rho})_{\kappa,t}$	$(\frac{\mu}{\rho})_{\kappa,a}$	$(\frac{\mu}{\rho})_{\tau,t}$	$(\frac{\mu}{\rho})_{\tau,a}$	$(\frac{\mu}{\rho})_{tot,t}$	$(\frac{\mu}{\rho})_{tot,t-coh}$	$(\frac{\mu}{\rho})_{tot,a}$	$(\frac{\mu}{\rho})_{tot,en}$
.001	.200	.0112	.000389	.0000219	.199	.0112	2.11					3550.	3550.	3550.	3550.	3550.	3550.
Na K .001073	.199	.0125	.000414	.0000259	.199	.0125	2.08					2950.	2950.	2950.	2950.	2950.	2950.
Mg K .001305	.199	.0173	.000505	.0000436	.199	.0172	2.00					3090.	3090.	3090.	3090.	3090.	3090.
.0015	.199	.0211	.000581	.0000614	.199	.0210	1.94					1740.	1740.	1750.	1740.	1740.	1740.
Al K .001560	.199	.0223	.000603	.0000676	.199	.0222	1.92					1760.	1760.	1760.	1760.	1760.	1760.
Si K .001839	.199	.0280	.000709	.000100	.198	.0278	1.81					1190.	1190.	1190.	1190.	1190.	1190.
.002	.199	.0312	.000772	.000121	.198	.0311	1.76					1060.	1060.	1060.	1060.	1060.	1060.
S K .002472	.198	.0404	.000950	.000191	.197	.0403	1.61					1270.	1260.	1270.	1270.	1270.	1260.
.003	.198	.0501	.00115	.000290	.197	.0497	1.45					796.	793.	798.	796.	796.	793.
K K .003607	.198	.0612	.00137	.000415	.196	.0608	1.29					1940.	1890.	1940.	1940.	1940.	1890.
.004	.197	.0663	.00152	.000509	.196	.0659	1.19					1520.	1490.	1530.	1520.	1520.	1490.
Ca K .004037	.197	.0671	.00153	.000521	.196	.0667	1.18					844.	827.	845.	844.	844.	827.
.005	.196	.0799	.00188	.000765	.195	.0792	.995					672.	829.	674.	672.	672.	829.
.006	.196	.0908	.00224	.00104	.194	.0898	.840					491.	483.	492.	491.	491.	483.
Fe K .007112	.195	.0997	.00263	.00137	.192	.0983	.708					289.	287.	290.	289.	289.	287.
.008	.194	.108	.00294	.00163	.191	.106	.624					312.	307.	314.	312.	312.	307.
.01	.193	.119	.00362	.00224	.189	.117	.481					234.	229.	235.	234.	234.	229.
.015	.189	.137	.00523	.00380	.184	.133	.284					225.	222.	226.	225.	225.	222.
.02	.186	.147	.00671	.00531	.180	.142	.187					310.	296.	311.	310.	310.	296.
.03	.180	.156	.00937	.00811	.171	.148	.100					171.	164.	172.	171.	171.	164.
.04	.174	.158	.0116	.0105	.163	.147	.0626					102.	98.9	103.	103.	102.	98.9
.05	.169	.157	.0136	.0127	.156	.145	.0428					63.5	61.8	64.3	63.6	63.5	61.8
.06	.164	.155	.0154	.0146	.149	.141	.0310					68.3	65.2	69.1	68.4	68.3	65.2
.08	.156	.150	.0183	.0176	.138	.133	.0184					49.0	47.0	49.8	49.1	49.0	47.0
.1	.148	.145	.0205	.0200	.128	.125	.0121					26.0	25.1	26.6	26.2	26.0	25.1
.15	.134	.132	.0243	.0239	.109	.108	.00557					7.84	7.65	8.26	7.98	7.85	7.65
.2	.122	.121	.0265	.0262	.0960	.0950	.00320					3.27	3.21	3.60	3.42	3.28	3.21
.3	.107	.106	.0287	.0286	.0778	.0774	.00145					.923	.911	1.18	1.08	.932	.919
.4	.0953	.0952	.0295	.0295	.0659	.0658	.000832					.373	.369	.593	.531	.384	.380
.5	.0871	.0869	.0297	.0298	.0573	.0572	.000541					.184	.182	.384	.341	.198	.195
.6	.0806	.0805	.0296	.0295	.0509	.0509	.000377					.103	.103	.290	.259	.119	.117
.8	.0708	.0707	.0289	.0287	.0418	.0421	.000214					.0418	.0415	.210	.192	.0600	.0591
1.	.0637	.0636	.0280	.0278	.0357	.0358	.000137					.0208	.0207	.178	.166	.0413	.0407
1.5	.0516	.0516	.0256	.0254	.0261	.0263	.0000458	.000154		.000154	.0000491	.00583	.00581	.143	.138	.0301	.0298
2.	.0441	.0441	.0234	.0232	.0207	.0209	.0000259	.000613		.000613	.000298	.00240	.00239	.127	.124	.0289	.0286
3.	.0347	.0347	.0200	.0197	.0147	.0150	.0000041	.00174	.0000121	.00175	.00116	.000690	.000689	.108	.107	.0294	.0293
4.	.0290	.0290	.0176	.0172	.0114	.0118	.0000023	.00287	.0000498	.00292	.00217	.000275	.000275	.0963	.0954	.0298	.0298
5.	.0250	.0250	.0157	.0152	.00931	.00976	.0000002	.00381	.0000974	.00391	.00309	.000145	.000145	.0876	.0871	.0298	.0299
6.	.0221	.0221	.0142	.0138	.00787	.00837	.0000002	.00466	.000148	.00481	.00396	.0000891	.0000891	.0810	.0806	.0297	.0296
8.	.0181	.0181	.0121	.0115	.00603	.00656		.00604	.000254	.00630	.00543	.0000426	.0000426	.0710	.0707	.0289	.0287
10.	.0154	.0154	.0105	.00996	.00489	.00544		.00722	.000352	.00757	.00665	.0000245	.0000245	.0637	.0636	.0280	.0278
15.	.0114	.0114	.00810	.00744	.00331	.00397		.00939	.000547	.00993	.00881	.0000079	.0000079	.0518	.0518	.0257	.0254
20.	.00915	.00915	.00666	.00592	.00250	.00323		.0111	.000704	.0118	.0102	.0000048	.0000048	.0447	.0447	.0240	.0236
30.	.00667	.00667	.00497	.00420	.00168	.00246		.0133	.000938	.0142	.0119	.0000022	.0000022	.0364	.0364	.0218	.0208
40.	.00530	.00530	.00403	.00325	.00127	.00205		.0148	.00111	.0159	.0128	.0000004	.0000004	.0319	.0319	.0205	.0194
50.	.00442	.00442	.00340	.00261	.00102	.00181		.0161	.00124	.0173	.0133	.0000003	.0000003	.0289	.0289	.0196	.0183
60.	.00381	.00381	.00295	.00217	.000852	.00164		.0169	.00135	.0183	.0135	.0000003	.0000003	.0269	.0269	.0191	.0177
80.	.00301	.00301	.00236	.00160	.000641	.00141		.0182	.00151	.0197	.0138	.0000002	.0000002	.0244	.0244	.0184	.0170
100.	.00250	.00250	.00198	.00123	.000515	.00127		.0193	.00163	.0210	.0139	.0000001	.0000001	.0230	.0230	.0181	.0166
														.0213	.0213	.0180	.0162
														.0209	.0209	.0184	.0162
														.0209	.0209	.0192	.0161
														.0212	.0212	.0200	.0160
														.0217	.0217	.0207	.0159
														.0221	.0221	.0212	.0157
														.0227	.0227	.0221	.0154
														.0235	.0235	.0230	.0151

Composition by weight: 0.0056 H, 0.4983 O, 0.0171 Na, 0.0024 Mg, 0.0456 Al, 0.3158 Si, 0.0012 S, 0.0192 K, 0.0826 Ca, 0.0122 Fe.

Table I (cont'd)

Mass Attenuation Coefficients for Air, Water, Concrete, and Sodium Iodide

SODIUM IODIDE
(cm^2/g)

E (MeV)	$(\frac{\mu}{\rho})^{KN}_{inc,t}$	$(\frac{\mu}{\rho})^{BD}_{inc,t}$	$(\frac{\mu}{\rho})^{KN}_{inc,a}$	$(\frac{\mu}{\rho})^{BD}_{inc,a}$	$(\frac{\mu}{\rho})^{KN}_{inc,s}$	$(\frac{\mu}{\rho})^{BD}_{inc,s}$	$(\frac{\mu}{\rho})_{coh}$	$(\frac{\mu}{\rho})_{\kappa_n}$	$(\frac{\mu}{\rho})_{\kappa_e}$	$(\frac{\mu}{\rho})_{\kappa,t}$	$(\frac{\mu}{\rho})_{\kappa,a}$	$(\frac{\mu}{\rho})_{\tau,t}$	$(\frac{\mu}{\rho})_{\tau,a}$	$(\frac{\mu}{\rho})_{tot,t}$	$(\frac{\mu}{\rho})_{tot,t-coh}$	$(\frac{\mu}{\rho})_{tot,a}$	$(\frac{\mu}{\rho})_{tot,en}$
.001	.170	.00578	.000332	.0000113	.170	.00577	7.41					9310.	9310.	9320.	9310.	9310.	9310.
I M_I .001072	.170	.00643	.000356	.0000135	.170	.00643	7.36					7920.	7920.	7930.	7920.	7920.	7920.
												9890.	9890.	9900.	9890.	9890.	9890.
Na K .001073	.170	.00643	.000356	.0000135	.170	.00643	7.36					9890.	9890.	9900.	9890.	9890.	9890.
												11100.	11100.	11200.	11100.	11100.	11100.
.0015	.170	.0104	.000495	.0000302	.169	.0103	7.02					4530.	4520.	4540.	4530.	4530.	4520.
.002	.170	.0151	.000660	.0000587	.169	.0151	6.60					2110.	2110.	2120.	2110.	2110.	2110.
.003	.169	.0242	.000980	.000140	.168	.0241	5.72					712.	712.	718.	712.	712.	712.
.004	.168	.0327	.00130	.000251	.167	.0324	5.01					332.	331.	337.	332.	332.	331.
I L_{III} .004557	.168	.0369	.00147	.000323	.166	.0366	4.63					234.	234.	239.	234.	234.	234.
												766.	681.	770.	766.	766.	681.
I L_{II} .004852	.168	.0391	.00157	.000363	.166	.0387	4.46					625.	561.	630.	626.	625.	561.
												859.	766.	863.	859.	859.	766.
.005	.168	.0401	.00161	.000385	.166	.0398	4.38					793.	712.	797.	793.	793.	712.
I L_I .005188	.168	.0415	.00166	.000412	.166	.0410	4.29					727.	654.	731.	727.	727.	654.
												831.	747.	836.	831.	831.	747.
.006	.167	.0468	.00191	.000536	.165	.0463	3.86					561.	512.	565.	561.	561.	512.
.008	.166	.0582	.00251	.000884	.163	.0572	3.04					259.	242.	262.	259.	259.	242.
.01	.165	.0676	.00309	.00127	.162	.0665	2.46					140.	132.	142.	140.	140.	132.
.015	.162	.0843	.00447	.00233	.157	.0821	1.60					45.7	44.1	47.3	45.7	45.7	44.1
.02	.159	.0950	.00573	.00343	.153	.0914	1.13					20.6	20.0	21.8	20.6	20.6	20.0
.03	.154	.107	.00800	.00557	.146	.102	.641					6.50	6.38	7.25	6.61	6.51	6.38
I K .033170	.152	.109	.00864	.00621	.143	.103	.550					4.87	4.79	5.53	4.98	4.88	4.80
												30.3	10.7	31.0	30.5	30.4	10.7
.04	.149	.113	.00994	.00753	.139	.106	.414					18.3	8.47	18.8	18.4	18.3	8.47
.05	.145	.116	.0116	.00936	.133	.107	.293					10.0	5.72	10.4	10.1	10.0	5.73
.06	.140	.118	.0132	.0110	.127	.107	.218					6.07	3.90	6.41	6.19	6.09	3.92
.08	.133	.117	.0156	.0137	.117	.103	.132					2.74	2.00	2.98	2.85	2.75	2.01
.1	.127	.115	.0175	.0159	.109	.0991	.0872					1.46	1.15	1.67	1.58	1.48	1.17
.15	.114	.108	.0207	.0196	.0932	.0886	.0409					.470	.402	.620	.579	.491	.422
.2	.104	.101	.0226	.0217	.0820	.0786	.0237					.209	.187	.333	.310	.232	.208
.3	.0908	.0891	.0245	.0240	.0665	.0652	.0108					.0671	.0623	.167	.156	.0917	.0863
.4	.0815	.0802	.0252	.0248	.0563	.0554	.00614					.0316	.0299	.118	.112	.0568	.0547
.5	.0743	.0738	.0254	.0251	.0490	.0485	.00397					.0177	.0169	.0955	.0915	.0430	.0420
.6	.0689	.0685	.0253	.0250	.0435	.0435	.00275					.0113	.0109	.0826	.0798	.0366	.0359
.8	.0602	.0602	.0247	.0242	.0357	.0360	.00156					.00575	.00558	.0675	.0659	.0305	.0298
1.	.0543	.0539	.0239	.0230	.0304	.0309	.00100					.00362	.00354	.0585	.0575	.0275	.0266
1.5	.0441	.0440	.0218	.0212	.0223	.0228	.000450	.000705		.000705	.000216	.00170	.00167	.0469	.0464	.0242	.0231
2.	.0376	.0376	.0200	.0192	.0177	.0184	.000254	.00246		.00246	.00114	.00104	.00103	.0413	.0411	.0235	.0213
3.	.0296	.0296	.0171	.0160	.0125	.0136	.000112	.00635	.0000103	.00635	.00393	.000563	.000558	.0366	.0365	.0240	.0205
4.	.0248	.0248	.0150	.0138	.00971	.0109	.0000627	.0100	.0000426	.0101	.00689	.000368	.000366	.0353	.0352	.0255	.0210
5.	.0214	.0214	.0134	.0120	.00796	.00931	.0000410	.0131	.0000835	.0132	.00948	.000274	.000273	.0348	.0348	.0269	.0218
6.	.0189	.0189	.0122	.0107	.00674	.00818	.0000287	.0156	.000129	.0157	.0117	.000217	.000216	.0349	.0348	.0281	.0226
8.	.0154	.0154	.0103	.00873	.00514	.00671	.0000158	.0197	.000219	.0199	.0151	.000152	.000151	.0355	.0355	.0304	.0240
10.	.0132	.0132	.00898	.00725	.00416	.00590	.0000098	.0231	.000300	.0234	.0179	.000117	.000116	.0367	.0367	.0325	.0252
15.	.00975	.00975	.00690	.00527	.00282	.00446	.0000045	.0299	.000471	.0304	.0224	.0000735	.0000735	.0402	.0402	.0374	.0278
20.	.00781	.00781	.00568	.00407	.00214	.00374		.0349	.000597	.0355	.0245	.0000530	.0000530	.0434	.0434	.0412	.0287
30.	.00568	.00568	.00425	.00268	.00144	.00299		.0418	.000780	.0426	.0269	.0000346	.0000345	.0483	.0483	.0469	.0296
40.	.00452	.00452	.00344	.00194	.00109	.00258		.0463	.000919	.0473	.0272	.0000253	.0000253	.0518	.0518	.0507	.0292
50.	.00377	.00377	.00291	.00149	.000869	.00228		.0501	.00101	.0511	.0272	.0000201	.0000201	.0549	.0549	.0540	.0287
60.	.00325	.00325	.00252	.00119	.000728	.00206		.0526	.00109	.0536	.0267	.0000165	.0000165	.0569	.0569	.0562	.0278
80.	.00256	.00256	.00202	.000828	.000548	.00174		.0568	.00122	.0579	.0263	.0000121	.0000121	.0604	.0604	.0599	.0271
100.	.00213	.00213	.00169	.000613	.000439	.00152		.0598	.00131	.0612	.0255	.0000096	.0000096	.0634	.0634	.0629	.0261

Table II

Constants Used to Calculate Photoelectric Cross Sections at Energy Levels

Energy level	n	k
K upper	2.04	0.00865
lower	1.63	0.0220
L_I upper	1.9	0.0175
lower	2.0	0.00650
L_{II} upper	2.0	0.00670
lower	2.0	0.00485
L_{III} upper	2.0	0.00525
lower	1.5	0.115
M_I upper	1.8	0.0290
lower	1.7	0.064
M_{II} upper	1.7	0.069
lower	1.7	0.058
M_{III} upper	1.7	0.065
lower	1.7	0.0565
M_{IV} upper	1.7	0.068
lower	1.7	0.060
M_V upper	1.7	0.061
lower	1.7	0.0195
N_I upper	1.7	0.033

Table III

X-ray Atomic Energy Levels in keV

Z	K	L_I	L_{II}	L_{III}	M_I	M_{II}	M_{III}
1	.014						
2	.025	.001					
3	.055	.003	.001	.001			
4	.111	.006	.002	.002			
5	.188	.009	.004	.004			
6	.284	.013	.005	.005			
7	.400	.018	.007	.007			
8	.533	.024	.009	.009			
9	.687	.032	.012	.012			
10	.867	.045	.018	.018	.001		
11	1.073	.063	.032	.032	.002		
12	1.305	.088	.050	.050	.003		
13	1.560	.118	.073	.073	.005		
14	1.839	.151	.099	.100	.007	.001	.001
15	2.144	.188	.130	.130	.010	.002	.002
16	2.472	.227	.165	.165	.014	.004	.004
17	2.824	.270	.203	.202	.018	.007	.007
18	3.203	.320	.247	.245	.025	.012	.012
19	3.607	.377	.296	.294	.034	.018	.018
20	4.037	.438	.350	.346	.044	.025	.025
21	4.491	.500	.406	.401	.053	.032	.032
22	4.966	.563	.462	.456	.060	.035	.035
23	5.465	.628	.521	.513	.066	.038	.038
24	5.989	.696	.584	.575	.074	.042	.042
25	6.539	.769	.651	.640	.084	.047	.047
26	7.112	.846	.721	.708	.093	.053	.053
27	7.709	.926	.794	.779	.101	.060	.060
28	8.332	1.008	.871	.854	.111	.067	.067
29	8.981	1.096	.953	.933	.122	.074	.074
30	9.659	1.193	1.043	1.020	.138	.088	.087
31	10.367	1.300	1.142	1.115	.158	.106	.103
32	11.104	1.413	1.248	1.217	.180	.126	.121
33	11.867	1.530	1.359	1.323	.204	.146	.140
34	12.658	1.652	1.475	1.434	.230	.168	.161
35	13.474	1.782	1.597	1.551	.257	.191	.184
36	14.323	1.921	1.727	1.675	.288	.219	.210
37	15.200	2.065	1.863	1.805	.322	.248	.239
38	16.105	2.216	2.007	1.940	.358	.280	.269
39	17.038	2.373	2.155	2.079	.394	.312	.299
40	17.998	2.533	2.307	2.223	.430	.344	.330
41	18.986	2.698	2.464	2.370	.467	.377	.361
42	20.000	2.867	2.625	2.521	.505	.410	.392
43	21.044	3.043	2.793	2.677	.545	.445	.426
44	22.117	3.224	2.967	2.838	.585	.483	.461
45	23.220	3.412	3.146	3.004	.627	.521	.496
46	24.350	3.605	3.330	3.174	.670	.559	.532
47	25.514	3.806	3.524	3.351	.718	.602	.571
48	26.711	4.018	3.727	3.537	.770	.651	.616
49	27.940	4.238	3.938	3.730	.826	.702	.664
50	29.200	4.465	4.156	3.929	.884	.756	.714

Table III (cont'd)

X-ray Atomic Energy Levels in keV

Z	K	L_I	L_{II}	L_{III}	M_I	M_{II}	M_{III}
51	30.491	4.698	4.381	4.132	.944	.812	.766
52	31.814	4.939	4.612	4.341	1.006	.870	.819
53	33.170	5.188	4.852	4.557	1.072	.931	.876
54	34.561	5.445	5.102	4.782	1.143	.997	.936
55	35.985	5.713	5.360	5.012	1.217	1.065	.998
56	37.441	5.987	5.623	5.247	1.291	1.135	1.061
57	38.925	6.266	5.891	5.484	1.363	1.204	1.124
58	40.443	6.549	6.164	5.723	1.435	1.273	1.185
59	41.991	6.835	6.440	5.964	1.505	1.337	1.242
60	43.569	7.128	6.722	6.208	1.575	1.403	1.298
61	45.184	7.428	7.013	6.459	1.648	1.471	1.357
62	46.834	7.736	7.312	6.716	1.723	1.541	1.419
63	48.519	8.052	7.618	6.977	1.800	1.614	1.481
64	50.239	8.375	7.930	7.243	1.881	1.688	1.544
65	51.996	8.708	8.252	7.514	1.963	1.765	1.610
66	53.788	9.046	8.580	7.790	2.046	1.842	1.676
67	55.618	9.394	8.918	8.072	2.130	1.923	1.743
68	57.486	9.752	9.264	8.358	2.217	2.006	1.812
69	59.390	10.116	9.617	8.648	2.306	2.090	1.881
70	61.332	10.489	9.978	8.943	2.398	2.175	1.950
71	63.316	10.874	10.349	9.245	2.494	2.264	2.024
72	65.345	11.272	10.739	9.560	2.600	2.364	2.108
73	67.416	11.680	11.136	9.880	2.709	2.469	2.194
74	69.525	12.098	11.541	10.204	2.820	2.575	2.281
75	71.676	12.528	11.957	10.534	2.934	2.682	2.368
76	73.871	12.969	12.385	10.871	3.052	2.792	2.457
77	76.111	13.419	12.824	11.215	3.173	2.908	2.551
78	78.395	13.880	13.273	11.564	3.297	3.027	2.645
79	80.725	14.353	13.734	11.919	3.425	3.150	2.743
80	83.102	14.842	14.209	12.283	3.562	3.280	2.847
81	85.530	15.346	14.697	12.656	3.704	3.416	2.956
82	88.004	15.861	15.200	13.035	3.851	3.554	3.066
83	90.526	16.391	15.714	13.420	4.000	3.696	3.177
84	93.105	16.936	16.244	13.814	4.156	3.849	3.295
85	95.730	17.491	16.785	14.214	4.317	4.006	3.416
86	98.404	18.055	17.337	14.619	4.482	4.164	3.538
87	101.137	18.639	17.904	15.030	4.652	4.325	3.664
88	103.922	19.237	18.484	15.446	4.824	4.490	3.791
89	106.759	19.845	19.083	15.870	5.002	4.658	3.918
90	109.651	20.466	19.693	16.300	5.182	4.830	4.046
91	112.601	21.105	20.314	16.733	5.364	5.003	4.174
92	115.606	21.759	20.948	17.170	5.548	5.181	4.304
93	118.670	22.427	21.600	17.613	5.735	5.366	4.435
94	121.797	23.109	22.270	18.063	5.927	5.555	4.568
95	124.990	23.812	22.958	18.519	6.122	5.748	4.703
96	128.253	24.535	23.663	18.982	6.322	5.945	4.839
97	131.590	25.275	24.385	19.452	6.526	6.147	4.977
98	135.005	26.030	25.125	19.929	6.735	6.353	5.117
99	138.502	26.803	25.883	20.414	6.949	6.564	5.259
100	142.085	27.594	26.659	20.907	7.168	6.780	5.403

Table III (cont'd)

X-ray Atomic Energy Levels in keV

Z	M_{IV}	M_V	N_I	N_{II}	N_{III}	N_{IV}	N_V
1							
2							
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19							
20							
21							
22							
23							
24	.001	.001					
25	.002	.002					
26	.003	.003					
27	.004	.004					
28	.005	.005					
29	.007	.007					
30	.010	.010	.001				
31	.017	.017	.002				
32	.028	.028	.004	.001	.001		
33	.041	.041	.008	.002	.002		
34	.055	.055	.012	.004	.004		
35	.072	.071	.018	.007	.007		
36	.091	.090	.024	.010	.010		
37	.112	.110	.031	.015	.015		
38	.135	.133	.038	.020	.020		
39	.158	.156	.044	.025	.025		
40	.182	.180	.051	.029	.029		
41	.206	.204	.057	.032	.032		
42	.230	.228	.063	.035	.035		
43	.256	.253	.070	.039	.038		
44	.284	.280	.075	.043	.042	.001	.001
45	.312	.307	.081	.048	.046	.002	.002
46	.340	.335	.087	.054	.051	.003	.003
47	.373	.367	.096	.061	.057	.005	.005
48	.410	.404	.108	.068	.064	.009	.009
49	.451	.443	.122	.077	.073	.016	.016
50	.493	.485	.137	.089	.085	.024	.024

Table III (cont'd)

X-ray Atomic Energy Levels in keV

Z	M_{IV}	M_V	N_I	N_{II}	N_{III}	N_{IV}	N_V
51	.537	.528	.152	.104	.097	.031	.031
52	.583	.572	.168	.120	.110	.040	.040
53	.633	.619	.186	.135	.126	.050	.050
54	.686	.672	.208	.152	.143	.063	.063
55	.740	.726	.231	.172	.162	.079	.079
56	.794	.780	.253	.192	.180	.092	.092
57	.848	.832	.271	.206	.192	.099	.099
58	.901	.883	.287	.221	.204	.105	.105
59	.951	.931	.302	.235	.216	.112	.112
60	1.001	.978	.317	.247	.227	.117	.117
61	1.052	1.027	.332	.260	.237	.122	.122
62	1.106	1.078	.347	.271	.247	.127	.127
63	1.161	1.131	.363	.284	.257	.134	.134
64	1.217	1.185	.379	.300	.269	.140	.140
65	1.274	1.240	.397	.316	.281	.148	.147
66	1.332	1.295	.416	.332	.293	.156	.154
67	1.392	1.351	.433	.349	.306	.165	.161
68	1.453	1.409	.451	.365	.320	.176	.169
69	1.515	1.468	.471	.382	.335	.187	.177
70	1.577	1.528	.492	.397	.351	.198	.188
71	1.641	1.591	.515	.420	.367	.210	.199
72	1.716	1.662	.539	.439	.384	.224	.213
73	1.793	1.735	.566	.465	.404	.240	.228
74	1.871	1.809	.595	.492	.424	.256	.242
75	1.950	1.883	.625	.518	.445	.273	.258
76	2.031	1.960	.656	.546	.468	.291	.274
77	2.116	2.040	.688	.577	.493	.311	.293
78	2.202	2.122	.724	.609	.519	.331	.313
79	2.291	2.206	.762	.644	.546	.353	.334
80	2.385	2.295	.801	.682	.574	.380	.360
81	2.485	2.389	.845	.723	.608	.407	.386
82	2.586	2.484	.891	.764	.643	.435	.413
83	2.689	2.581	.939	.805	.679	.464	.440
84	2.798	2.683	.990	.851	.707	.498	.473
85	2.909	2.787	1.042	.898	.740	.533	.506
86	3.022	2.892	1.095	.948	.772	.568	.541
87	3.136	3.000	1.150	.999	.810	.603	.576
88	3.253	3.109	1.208	1.052	.858	.638	.610
89	3.371	3.219	1.269	1.110	.910	.675	.644
90	3.490	3.332	1.330	1.168	.968	.713	.676
91	3.609	3.442	1.385	1.224	1.007	.746	.708
92	3.728	3.552	1.441	1.273	1.045	.780	.740
93	3.850	3.664	1.501	1.328	1.087	.816	.772
94	3.973	3.778	1.562	1.383	1.130	.849	.801
95	4.100	3.894	1.625	1.439	1.170	.881	.828
96	4.230	4.012	1.689	1.496	1.207	.912	.853
97	4.364	4.132	1.755	1.555	1.245	.943	.877
98	4.502	4.254	1.822	1.616	1.285	.973	.902
99	4.644	4.378	1.891	1.680	1.327	1.001	.927
100	4.790	4.504	1.961	1.747	1.370	1.027	.952

Table III (cont'd)

X-ray Atomic Energy Levels in keV

Z	N_{VI}	N_{VII}	O_I	O_{II}	O_{III}	O_{IV}	O_V
1							
2							
3							
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45							
46							
47							
48							
49			.001	.001	.001		
50			.004	.002	.002		

Table III (cont'd)

X-ray Atomic Energy Levels in keV

Z	N_{VI}	N_{VII}	O_I	O_{II}	O_{III}	O_{IV}	O_V
51			.007	.003	.003		
52			.012	.005	.005		
53			.016	.007	.007		
54			.018	.009	.009		
55			.020	.011	.011		
56			.021	.014	.013		
57			.022	.015	.014		
58			.024	.016	.015		
59			.025	.018	.016		
60			.027	.019	.017		
61			.029	.020	.017		
62			.031	.021	.018		
63			.033	.022	.019		
64			.036	.024	.020		
65			.039	.025	.021		
66	.001	.001	.042	.026	.022		
67	.002	.002	.045	.028	.023		
68	.003	.003	.049	.029	.025		
69	.005	.005	.053	.031	.026		
70	.008	.008	.057	.033	.028		
71	.011	.011	.061	.036	.029		
72	.017	.017	.066	.039	.031		
73	.025	.025	.071	.043	.033		
74	.036	.034	.076	.047	.036	.001	.001
75	.044	.041	.082	.051	.039	.002	.002
76	.053	.050	.088	.055	.042	.003	.003
77	.063	.060	.095	.060	.046	.004	.004
78	.074	.071	.102	.065	.052	.005	.005
79	.086	.083	.110	.072	.058	.008	.008
80	.102	.098	.121	.080	.066	.012	.011
81	.123	.116	.134	.091	.075	.015	.013
82	.143	.137	.147	.104	.086	.020	.018
83	.162	.157	.161	.117	.098	.026	.024
84	.183	.178	.177	.133	.108	.034	.031
85	.209	.204	.195	.150	.120	.042	.037
86	.240	.234	.213	.165	.131	.053	.044
87	.270	.263	.233	.180	.142	.067	.054
88	.296	.288	.253	.198	.153	.077	.067
89	.320	.312	.271	.214	.164	.087	.079
90	.344	.335	.290	.230	.175	.094	.088
91	.368	.358	.310	.247	.185	.100	.092
92	.392	.381	.324	.265	.195	.105	.096
93	.415	.404	.340	.283	.206	.109	.101
94	.440	.428	.352	.300	.217	.116	.106
95	.466	.454	.369	.315	.228	.123	.112
96	.493	.481	.382	.331	.239	.129	.118
97	.521	.509	.398	.347	.250	.135	.124
98	.551	.538	.413	.363	.260	.142	.130
99	.582	.568	.430	.378	.270	.149	.136
100	.614	.599	.448	.393	.280	.155	.142

Table IV

K X-ray Energies in keV

Z	K - L_{II} = α_2	K - L_{III} = α_1	K - M_{II} = β_3	K - M_{III} = β_1	K - M_{IV} = $\beta_{5/1}$	K - M_V = $\beta_{5/2}$
1						
2						
3	.054	.054				
4	.109	.109				
5	.184	.184				
6	.279	.279				
7	.393	.393				
8	.524	.524				
9	.675	.675				
10	.849	.849				
11	1.041	1.041				
12	1.255	1.255				
13	1.487	1.487				
14	1.740	1.739	1.838	1.838		
15	2.014	2.014	2.142	2.142		
16	2.307	2.307	2.468	2.468		
17	2.621	2.622	2.817	2.817		
18	2.956	2.958	3.191	3.191		
19	3.311	3.313	3.589	3.589		
20	3.687	3.691	4.012	4.012		
21	4.085	4.090	4.459	4.459		
22	4.504	4.510	4.931	4.931		
23	4.944	4.952	5.427	5.427		
24	5.405	5.414	5.947	5.947	5.988	5.988
25	5.888	5.899	6.492	6.492	6.537	6.537
26	6.391	6.404	7.059	7.059	7.109	7.109
27	6.915	6.930	7.649	7.649	7.705	7.705
28	7.461	7.478	8.265	8.265	8.327	8.327
29	8.028	8.048	8.907	8.907	8.974	8.974
30	8.616	8.639	9.571	9.572	9.649	9.649
31	9.225	9.252	10.261	10.264	10.350	10.350
32	9.856	9.887	10.978	10.983	11.076	11.076
33	10.508	10.544	11.721	11.727	11.826	11.826
34	11.183	11.224	12.490	12.497	12.603	12.603
35	11.877	11.923	13.283	13.290	13.402	13.403
36	12.596	12.648	14.104	14.113	14.232	14.233
37	13.337	13.395	14.952	14.961	15.088	15.090
38	14.098	14.165	15.825	15.836	15.970	15.972
39	14.883	14.959	16.726	16.739	16.880	16.882
40	15.691	15.775	17.654	17.668	17.816	17.818
41	16.522	16.616	18.609	18.625	18.780	18.782
42	17.375	17.479	19.590	19.608	19.770	19.772
43	18.251	18.367	20.599	20.618	20.788	20.791
44	19.150	19.279	21.634	21.656	21.833	21.837
45	20.074	20.216	22.699	22.724	22.908	22.913
46	21.020	21.176	23.791	23.818	24.010	24.015
47	21.990	22.163	24.912	24.943	25.141	25.147
48	22.984	23.174	26.060	26.095	26.301	26.307
49	24.002	24.210	27.238	27.276	27.489	27.497
50	25.044	25.271	28.444	28.486	28.707	28.715

Table IV (cont'd)

K X-ray Energies in keV

Z	K - $L_{II}=\alpha_2$	K - $L_{III}=\alpha_1$	K - $M_{II}=\beta_3$	K - $M_{III}=\beta_1$	K - $M_{IV}=\beta_{5/1}$	K - $M_V=\beta_{5/2}$
51	26.110	26.359	29.679	29.725	29.954	29.963
52	27.202	27.473	30.944	30.995	31.231	31.242
53	28.318	28.613	32.239	32.294	32.537	32.551
54	29.459	29.779	33.564	33.625	33.875	33.889
55	30.625	30.973	34.920	34.987	35.245	35.259
56	31.818	32.194	36.306	36.380	36.647	36.661
57	33.034	33.441	37.721	37.801	38.077	38.093
58	34.279	34.720	39.170	39.258	39.542	39.560
59	35.551	36.027	40.654	40.749	41.040	41.060
60	36.847	37.361	42.166	42.271	42.568	42.591
61	38.171	38.725	43.713	43.827	44.132	44.157
62	39.522	40.118	45.293	45.415	45.728	45.756
63	40.901	41.542	46.905	47.038	47.358	47.388
64	42.309	42.996	48.551	48.695	49.022	49.054
65	43.744	44.482	50.231	50.386	50.722	50.756
66	45.208	45.998	51.946	52.112	52.456	52.493
67	46.700	47.546	53.695	53.875	54.226	54.267
68	48.222	49.128	55.480	55.674	56.033	56.077
69	49.773	50.742	57.300	57.509	57.875	57.922
70	51.354	52.389	59.157	59.382	59.755	59.804
71	52.967	54.071	61.052	61.292	61.675	61.725
72	54.606	55.785	62.981	63.237	63.629	63.683
73	56.280	57.536	64.947	65.222	65.623	65.681
74	57.984	59.321	66.950	67.244	67.654	67.716
75	59.719	61.142	68.994	69.308	69.726	69.793
76	61.486	63.000	71.079	71.414	71.840	71.911
77	63.287	64.896	73.203	73.560	73.995	74.071
78	65.122	66.831	75.368	75.750	76.193	76.273
79	66.991	68.806	77.575	77.982	78.434	78.519
80	68.893	70.819	79.822	80.255	80.717	80.807
81	70.833	72.874	82.114	82.574	83.045	83.141
82	72.804	74.969	84.450	84.938	85.418	85.520
83	74.812	77.106	86.830	87.349	87.837	87.945
84	76.861	79.291	89.256	89.810	90.307	90.422
85	78.945	81.516	91.724	92.314	92.821	92.943
86	81.067	83.785	94.240	94.866	95.382	95.512
87	83.233	86.107	96.812	97.473	98.001	98.137
88	85.438	88.476	99.432	100.131	100.669	100.813
89	87.676	90.889	102.101	102.841	103.388	103.540
90	89.958	93.351	104.821	105.605	106.161	106.319
91	92.287	95.868	107.598	108.427	108.992	109.159
92	94.658	98.436	110.425	111.302	111.878	112.054
93	97.070	101.057	113.304	114.235	114.820	115.006
94	99.527	103.734	116.242	117.229	117.824	118.019
95	102.032	106.471	119.242	120.287	120.890	121.096
96	104.590	109.271	122.308	123.414	124.023	124.241
97	107.205	112.138	125.443	126.613	127.226	127.458
98	109.880	115.076	128.652	129.888	130.503	130.751
99	112.619	118.088	131.938	133.243	133.858	134.124
100	115.426	121.178	135.305	136.682	137.295	137.581

Table IV (cont'd)

K X-ray Energies in keV

Z	K - N_{II}= $\beta_{2/1}$	K - N_{III}= $\beta_{2/3}$	K - N_{IV}= $\beta_{4/1}$	K - N_{V}= $\beta_{4/3}$	K - O_{II}= $\beta_{2/3}$	K - O_{III}= $\beta_{2/4}$
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29						
30						
31						
32	11.103	11.103				
33	11.865	11.865				
34	12.654	12.654				
35	13.467	13.467				
36	14.313	14.313				
37	15.185	15.185				
38	16.085	16.085				
39	17.013	17.013				
40	17.969	17.969				
41	18.954	18.954				
42	19.965	19.965				
43	21.005	21.006				
44	22.074	22.075	22.116	22.116		
45	23.172	23.174	23.218	23.218		
46	24.296	24.299	24.347	24.347		
47	25.453	25.457	25.509	25.509		
48	26.643	26.647	26.702	26.702		
49	27.863	27.867	27.924	27.924	27.939	27.939
50	29.111	29.115	29.176	29.176	29.198	29.198

Table IV (cont'd)

K X-ray Energies in keV

Z	K - N_{II}=$\beta_{2/1}$	K - N_{III}= $\beta_{2/2}$	K - N_{IV}= $\beta_{4/1}$	K - N_{V}= $\beta_{4/2}$	K - O_{II}= $\beta_{2/3}$	K - O_{III}= $\beta_{2/4}$
51	30.387	30.394	30.460	30.460	30.488	30.488
52	31.694	31.704	31.774	31.774	31.809	31.809
53	33.035	33.044	33.120	33.120	33.163	33.163
54	34.409	34.418	34.498	34.498	34.552	34.552
55	35.813	35.823	35.906	35.906	35.974	35.974
56	37.249	37.261	37.349	37.349	37.427	37.428
57	38.719	38.733	38.826	38.826	38.910	38.911
58	40.222	40.239	40.338	40.338	40.427	40.428
59	41.756	41.775	41.879	41.879	41.973	41.975
60	43.322	43.342	43.452	43.452	43.550	43.552
61	44.924	44.947	45.062	45.062	45.164	45.167
62	46.563	46.587	46.707	46.707	46.813	46.816
63	48.235	48.262	48.385	48.385	48.497	48.500
64	49.939	49.970	50.099	50.099	50.215	50.219
65	51.680	51.715	51.848	51.849	51.971	51.975
66	53.456	53.495	53.632	53.634	53.762	53.766
67	55.269	55.312	55.453	55.457	55.590	55.595
68	57.121	57.166	57.310	57.317	57.457	57.461
69	59.008	59.055	59.203	59.213	59.359	59.364
70	60.935	60.981	61.134	61.144	61.299	61.304
71	62.896	62.949	63.106	63.117	63.280	63.287
72	64.906	64.961	65.121	65.132	65.306	65.314
73	66.951	67.012	67.176	67.188	67.373	67.383
74	69.033	69.101	69.269	69.283	69.478	69.489
75	71.158	71.231	71.403	71.418	71.625	71.637
76	73.325	73.403	73.580	73.597	73.816	73.829
77	75.534	75.618	75.800	75.818	76.051	76.065
78	77.786	77.876	78.064	78.082	78.330	78.343
79	80.081	80.179	80.372	80.391	80.653	80.667
80	82.420	82.528	82.722	82.742	83.022	83.036
81	84.807	84.922	85.123	85.144	85.439	85.455
82	87.240	87.361	87.569	87.591	87.900	87.918
83	89.721	89.847	90.062	90.086	90.409	90.428
84	92.254	92.398	92.607	92.632	92.972	92.997
85	94.832	94.990	95.197	95.224	95.580	95.610
86	97.456	97.632	97.836	97.863	98.239	98.273
87	100.138	100.327	100.534	100.561	100.957	100.995
88	102.870	103.064	103.284	103.312	103.724	103.769
89	105.649	105.849	106.084	106.115	106.545	106.595
90	108.483	108.683	108.938	108.975	109.421	109.476
91	111.377	111.594	111.855	111.893	112.354	112.416
92	114.333	114.561	114.826	114.866	115.341	115.411
93	117.342	117.583	117.854	117.898	118.387	118.464
94	120.414	120.667	120.948	120.996	121.497	121.580
95	123.551	123.820	124.109	124.162	124.675	124.762
96	126.757	127.046	127.341	127.400	127.922	128.014
97	130.035	130.345	130.647	130.713	131.243	131.340
98	133.389	133.720	134.032	134.103	134.642	134.745
99	136.822	137.175	137.501	137.575	138.124	138.232
100	140.338	140.715	141.058	141.133	141.692	141.805

Table V

L X-ray Energies in keV

Z	L_I-M_I=$\beta_{5/1}$	L_I-M_{II}=β_4	L_I-M_{III}=β_3	L_I-M_{IV}=β_{10}	L_I-M_V=$\beta_{9/1}$	L_I-N_I=$\beta_{9/2}$
1						
2						
3						
4						
5						
6						
7						
8						
9						
10	.044					
11	.061					
12	.085					
13	.113					
14	.144	.150	.150			
15	.178	.186	.186			
16	.213	.223	.223			
17	.252	.263	.263			
18	.295	.308	.308			
19	.343	.359	.359			
20	.394	.413	.413			
21	.447	.468	.468			
22	.503	.528	.528			
23	.562	.590	.590			
24	.622	.654	.654	.695	.695	
25	.685	.722	.722	.767	.767	
26	.753	.793	.793	.843	.843	
27	.825	.866	.866	.922	.922	
28	.897	.941	.941	1.003	1.003	
29	.974	1.022	1.022	1.089	1.089	
30	1.055	1.105	1.106	1.183	1.183	1.192
31	1.142	1.194	1.197	1.283	1.283	1.298
32	1.233	1.287	1.292	1.385	1.385	1.409
33	1.326	1.384	1.390	1.489	1.489	1.522
34	1.422	1.484	1.491	1.597	1.597	1.640
35	1.525	1.591	1.598	1.710	1.711	1.764
36	1.633	1.702	1.711	1.830	1.831	1.897
37	1.743	1.817	1.826	1.953	1.955	2.034
38	1.858	1.936	1.947	2.081	2.083	2.178
39	1.979	2.061	2.074	2.215	2.217	2.329
40	2.103	2.189	2.203	2.351	2.353	2.482
41	2.231	2.321	2.337	2.492	2.494	2.641
42	2.362	2.457	2.475	2.637	2.639	2.804
43	2.498	2.598	2.617	2.787	2.790	2.973
44	2.639	2.741	2.763	2.940	2.944	3.149
45	2.785	2.891	2.916	3.100	3.105	3.331
46	2.935	3.046	3.073	3.265	3.270	3.518
47	3.088	3.204	3.235	3.433	3.439	3.710
48	3.248	3.367	3.402	3.608	3.614	3.910
49	3.412	3.536	3.574	3.787	3.795	4.116
50	3.581	3.709	3.751	3.972	3.980	4.328

Table V (cont'd)

L X-ray Energies in keV

Z	L_I-M_I=$\beta_{5/1}$	L_I-M_{II}=β_4	L_I-M_{III}=β_3	L_I-M_{IV}=β_{10}	L_I-M_V=$\beta_{9/1}$	L_I-N_I=$\beta_{9/2}$
51	3.754	3.886	3.932	4.161	4.170	4.546
52	3.933	4.069	4.120	4.356	4.367	4.771
53	4.116	4.257	4.312	4.555	4.569	5.002
54	4.302	4.448	4.509	4.759	4.773	5.237
55	4.496	4.648	4.715	4.973	4.987	5.482
56	4.696	4.852	4.926	5.193	5.207	5.734
57	4.903	5.062	5.142	5.418	5.434	5.995
58	5.114	5.276	5.364	5.648	5.666	6.262
59	5.330	5.498	5.593	5.884	5.904	6.533
60	5.553	5.725	5.830	6.127	6.150	6.811
61	5.780	5.957	6.071	6.376	6.401	7.096
62	6.013	6.195	6.317	6.630	6.658	7.389
63	6.252	6.438	6.571	6.891	6.921	7.689
64	6.494	6.687	6.831	7.158	7.190	7.996
65	6.745	6.943	7.098	7.434	7.468	8.311
66	7.000	7.204	7.370	7.714	7.751	8.630
67	7.264	7.471	7.651	8.002	8.043	8.961
68	7.535	7.746	7.940	8.299	8.343	9.301
69	7.810	8.026	8.235	8.601	8.648	9.645
70	8.091	8.314	8.539	8.912	8.961	9.997
71	8.380	8.610	8.850	9.233	9.283	10.359
72	8.672	8.908	9.164	9.556	9.610	10.733
73	8.971	9.211	9.486	9.887	9.945	11.114
74	9.278	9.523	9.817	10.227	10.289	11.503
75	9.594	9.846	10.160	10.578	10.645	11.903
76	9.917	10.177	10.512	10.938	11.009	12.313
77	10.246	10.511	10.868	11.303	11.379	12.731
78	10.583	10.853	11.235	11.678	11.758	13.156
79	10.928	11.203	11.610	12.062	12.147	13.591
80	11.280	11.562	11.995	12.457	12.547	14.041
81	11.642	11.930	12.390	12.861	12.957	14.501
82	12.010	12.307	12.795	13.275	13.377	14.970
83	12.391	12.695	13.214	13.702	13.810	15.452
84	12.780	13.087	13.641	14.138	14.253	15.946
85	13.174	13.485	14.075	14.582	14.704	16.449
86	13.573	13.891	14.517	15.033	15.163	16.960
87	13.987	14.314	14.975	15.503	15.639	17.489
88	14.413	14.747	15.446	15.984	16.128	18.029
89	14.843	15.187	15.927	16.474	16.626	18.576
90	15.284	15.636	16.420	16.976	17.134	19.136
91	15.741	16.102	16.931	17.496	17.663	19.720
92	16.211	16.578	17.455	18.031	18.207	20.318
93	16.692	17.061	17.992	18.577	18.763	20.926
94	17.182	17.554	18.541	19.136	19.331	21.547
95	17.690	18.064	19.109	19.712	19.918	22.187
96	18.213	18.590	19.696	20.305	20.523	22.846
97	18.749	19.128	20.298	20.911	21.143	23.520
98	19.295	19.677	20.913	21.528	21.776	24.208
99	19.854	20.239	21.544	22.159	22.425	24.912
100	20.426	20.814	22.191	22.804	23.090	25.633

Table V (cont'd)

L X-ray Energies in keV

Z	L_I-N_{II}=γ_2	L_I-N_{III}=γ_3	L_I-N_{IV}=$\beta_{9/3}$	L_I-N_V=$\gamma_{1'/1}$	L_I-N_{VI}=$\gamma_{1'/2}$	L_I-N_{VII}=$\gamma_{1'/3}$
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24						
25						
26						
26						
27						
28						
29						
30						
31						
32	1.412	1.412				
33	1.528	1.528				
34	1.648	1.648				
35	1.775	1.775				
36	1.911	1.911				
37	2.050	2.050				
38	2.196	2.196				
39	2.348	2.348				
40	2.504	2.504				
41	2.666	2.666				
42	2.832	2.832				
43	3.004	3.005				
44	3.181	3.182	3.223	3.223		
45	3.364	3.366	3.410	3.410		
46	3.551	3.554	3.602	3.602		
47	3.745	3.749	3.801	3.801		
48	3.950	3.954	4.009	4.009		
49	4.161	4.165	4.222	4.222		
50	4.376	4.380	4.441	4.441		

Table V (cont'd)

L X-ray Energies in keV

Z	L_I-N_{II}=γ_2	L_I-N_{III}=γ_3	L_I-N_{IV}=$\beta_{9/3}$	L_I-N_V=$\gamma_{11/1}$	L_I-N_{VI}=$\gamma_{11/2}$	L_I-N_{VII}=$\gamma_{11/3}$
51	4.594	4.601	4.667	4.667		
52	4.819	4.829	4.899	4.899		
53	5.053	5.062	5.138	5.138		
54	5.293	5.302	5.382	5.382		
55	5.541	5.551	5.634	5.634		
56	5.795	5.807	5.895	5.895		
57	6.060	6.074	6.167	6.167		
58	6.328	6.345	6.444	6.444		
59	6.600	6.619	6.723	6.723		
60	6.881	6.901	7.011	7.011		
61	7.168	7.191	7.306	7.306		
62	7.465	7.489	7.609	7.609		
63	7.768	7.795	7.918	7.918		
64	8.075	8.106	8.235	8.235		
65	8.392	8.427	8.560	8.561		
66	8.714	8.753	8.890	8.892	9.045	9.045
67	9.045	9.088	9.229	9.233	9.392	9.392
68	9.387	9.432	9.576	9.583	9.749	9.749
69	9.734	9.781	9.929	9.939	10.111	10.111
70	10.092	10.138	10.291	10.301	10.481	10.481
71	10.454	10.507	10.664	10.675	10.863	10.863
72	10.833	10.888	11.048	11.059	11.255	11.255
73	11.215	11.276	11.440	11.452	11.655	11.655
74	11.606	11.674	11.842	11.856	12.062	12.064
75	12.010	12.083	12.255	12.270	12.484	12.487
76	12.423	12.501	12.678	12.695	12.916	12.919
77	12.842	12.926	13.108	13.126	13.356	13.359
78	13.271	13.361	13.549	13.567	13.806	13.809
79	13.709	13.807	14.000	14.019	14.267	14.270
80	14.160	14.268	14.462	14.482	14.740	14.744
81	14.623	14.738	14.939	14.960	15.223	15.230
82	15.097	15.218	15.426	15.448	15.718	15.724
83	15.586	15.712	15.927	15.951	16.229	16.234
84	16.085	16.229	16.438	16.463	16.753	16.758
85	16.593	16.751	16.958	16.985	17.282	17.287
86	17.107	17.283	17.487	17.514	17.815	17.821
87	17.640	17.829	18.036	18.063	18.369	18.376
88	18.185	18.379	18.599	18.627	18.941	18.949
89	18.735	18.935	19.170	19.201	19.525	19.533
90	19.298	19.498	19.753	19.790	20.122	20.131
91	19.881	20.098	20.359	20.397	20.737	20.747
92	20.486	20.714	20.979	21.019	21.367	21.378
93	21.099	21.340	21.611	21.655	22.012	22.023
94	21.726	21.979	22.260	22.308	22.669	22.681
95	22.373	22.642	22.931	22.984	23.346	23.358
96	23.039	23.328	23.623	23.682	24.042	24.054
97	23.720	24.030	24.332	24.398	24.754	24.766
98	24.414	24.745	25.057	25.128	25.479	25.492
99	25.123	25.476	25.802	25.876	26.221	26.235
100	25.847	26.224	26.567	26.642	26.980	26.995

Table V (cont'd)

L X-ray Energies in keV

Z	L_I-O_I=$\gamma_{11/4}$	L_I-O_{II}=$\gamma_{4/1}$	L_I-O_{III}=$\gamma_{4/2}$	L_I-O_{IV}=$\gamma_{11/5}$	L_I-O_V=$\gamma_{11/6}$
1					
2					
3					
4					
5					
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41					
42					
43					
44					
45					
46					
47					
48					
49	4.237	4.237	4.237		
50	4.461	4.463	4.463		

Table V (cont'd)

L X-ray Energies in keV

Z	L_I-O_I=$\gamma_{11/4}$	L_I-O_{II}=$\gamma_{4/1}$	L_I-O_{III}=$\gamma_{4/2}$	L_I-O_{IV}=$\gamma_{11/5}$	L_I-O_V =$\gamma_{11/6}$
51	4.691	4.695	4.695		
52	4.927	4.934	4.934		
53	5.172	5.181	5.181		
54	5.427	5.436	5.436		
55	5.693	5.702	5.702		
56	5.966	5.973	5.974		
57	6.244	6.251	6.252		
58	6.525	6.533	6.534		
59	6.810	6.817	6.819		
60	7.101	7.109	7.111		
61	7.399	7.408	7.411		
62	7.705	7.715	7.718		
63	8.019	8.030	8.033		
64	8.339	8.351	8.355		
65	8.669	8.683	8.687		
66	9.004	9.020	9.024		
67	9.349	9.366	9.371		
68	9.703	9.723	9.727		
69	10.063	10.085	10.090		
70	10.432	10.456	10.461		
71	10.813	10.838	10.845		
72	11.206	11.233	11.241		
73	11.609	11.637	11.647		
74	12.022	12.051	12.062	12.097	12.097
75	12.446	12.477	12.489	12.526	12.526
76	12.881	12.914	12.927	12.966	12.966
77	13.324	13.359	13.373	13.415	13.415
78	13.778	13.815	13.828	13.875	13.875
79	14.243	14.281	14.295	14.345	14.345
80	14.721	14.762	14.776	14.830	14.831
81	15.212	15.255	15.271	15.331	15.333
82	15.714	15.757	15.775	15.841	15.843
83	16.230	16.274	16.293	16.365	16.367
84	16.759	16.803	16.828	16.902	16.905
85	17.296	17.341	17.371	17.449	17.454
86	17.842	17.890	17.924	18.002	18.011
87	18.406	18.459	18.497	18.572	18.585
88	18.984	19.039	19.084	19.160	19.170
89	19.574	19.631	19.681	19.758	19.766
90	20.176	20.236	20.291	20.372	20.378
91	20.795	20.858	20.920	21.005	21.013
92	21.435	21.494	21.564	21.654	21.663
93	22.087	22.144	22.221	22.318	22.326
94	22.757	22.809	22.892	22.993	23.003
95	23.443	23.497	23.584	23.689	23.700
96	24.153	24.204	24.296	24.406	24.417
97	24.877	24.928	25.025	25.140	25.151
98	25.617	25.667	25.770	25.888	25.900
99	26.373	26.425	26.533	26.654	26.667
100	27.146	27.201	27.314	27.439	27.452

Table V (cont'd)

L X-ray Energies in keV

Z	L_{II}-M_I=η	L_{II}-M_{II}=γ_{1}	L_{II}-M_{III}=β_{17}	L_{II}-M_{IV}=β_1	L_{II}-M_V=β_{17}	L_{II}-N_I=γ_5
1						
2						
3						
4						
5						
6						
7						
8						
9						
10	.017					
11	.030					
12	.047					
13	.068					
14	.092	.098	.098			
15	.120	.128	.128			
16	.151	.161	.161			
17	.185	.196	.196			
18	.222	.235	.235			
19	.262	.278	.278			
20	.306	.325	.325			
21	.353	.374	.374			
22	.402	.427	.427			
23	.455	.483	.483			
24	.510	.542	.542	.583	.583	
25	.567	.604	.604	.649	.649	
26	.628	.668	.668	.718	.718	
27	.693	.734	.734	.790	.790	
28	.760	.804	.804	.866	.866	
29	.831	.879	.879	.946	.946	
30	.905	.955	.956	1.033	1.033	1.042
31	.984	1.036	1.039	1.125	1.125	1.140
32	1.068	1.122	1.127	1.220	1.220	1.244
33	1.155	1.213	1.219	1.318	1.318	1.351
34	1.245	1.307	1.314	1.420	1.420	1.463
35	1.340	1.406	1.413	1.525	1.526	1.579
36	1.439	1.508	1.517	1.636	1.637	1.703
37	1.541	1.615	1.624	1.751	1.753	1.832
38	1.649	1.727	1.738	1.872	1.874	1.969
39	1.761	1.843	1.856	1.997	1.999	2.111
40	1.877	1.963	1.977	2.125	2.127	2.256
41	1.997	2.087	2.103	2.258	2.260	2.407
42	2.120	2.215	2.233	2.395	2.397	2.562
43	2.248	2.348	2.367	2.537	2.540	2.723
44	2.382	2.484	2.506	2.683	2.687	2.892
45	2.519	2.625	2.650	2.834	2.839	3.065
46	2.660	2.771	2.798	2.990	2.995	3.243
47	2.806	2.922	2.953	3.151	3.157	3.428
48	2.957	3.076	3.111	3.317	3.323	3.619
49	3.112	3.236	3.274	3.487	3.495	3.816
50	3.272	3.400	3.442	3.663	3.671	4.019

Table V (cont'd)

L X-ray Energies in keV

Z	L_{II}-M_I=η	L_{II}-M_{II}=$\gamma_{11/7}$	L_{II}-M_{III}=$\beta_{17/1}$	L_{II}-M_{IV}=β_1	L_{II}-M_V=$\beta_{17/2}$	L_{II}-N_I=γ_5
51	3.437	3.569	3.615	3.844	3.853	4.229
52	3.606	3.742	3.793	4.029	4.040	4.444
53	3.780	3.921	3.976	4.219	4.233	4.666
54	3.959	4.105	4.166	4.416	4.430	4.894
55	4.143	4.295	4.362	4.620	4.634	5.129
56	4.332	4.488	4.562	4.829	4.843	5.370
57	4.528	4.687	4.767	5.043	5.059	5.620
58	4.729	4.891	4.979	5.263	5.281	5.877
59	4.935	5.103	5.198	5.489	5.509	6.138
60	5.147	5.319	5.424	5.721	5.744	6.405
61	5.365	5.542	5.656	5.961	5.986	6.681
62	5.589	5.771	5.893	6.206	6.234	6.965
63	5.818	6.004	6.137	6.457	6.487	7.255
64	6.049	6.242	6.386	6.713	6.745	7.551
65	6.289	6.487	6.642	6.978	7.012	7.855
66	6.534	6.738	6.904	7.248	7.285	8.164
67	6.788	6.995	7.175	7.526	7.567	8.485
68	7.047	7.258	7.452	7.811	7.855	8.813
69	7.311	7.527	7.736	8.102	8.149	9.146
70	7.580	7.803	8.028	8.401	8.450	9.486
71	7.855	8.085	8.325	8.708	8.758	9.834
72	8.139	8.375	8.631	9.023	9.077	10.200
73	8.427	8.667	8.942	9.343	9.401	10.570
74	8.721	8.966	9.260	9.670	9.732	10.946
75	9.023	9.275	9.589	10.007	10.074	11.332
76	9.333	9.593	9.928	10.354	10.425	11.729
77	9.651	9.916	10.273	10.708	10.784	12.136
78	9.976	10.246	10.628	11.071	11.151	12.549
79	10.309	10.584	10.991	11.443	11.528	12.972
80	10.647	10.929	11.362	11.824	11.914	13.408
81	10.993	11.281	11.741	12.212	12.308	13.852
82	11.349	11.646	12.134	12.614	12.716	14.309
83	11.714	12.018	12.537	13.025	13.133	14.775
84	12.088	12.395	12.949	13.446	13.561	15.254
85	12.468	12.779	13.369	13.876	13.998	15.743
86	12.855	13.173	13.799	14.315	14.445	16.242
87	13.252	13.579	14.240	14.768	14.904	16.754
88	13.660	13.994	14.693	15.231	15.375	17.276
89	14.081	14.425	15.165	15.712	15.864	17.814
90	14.511	14.863	15.647	16.203	16.361	18.363
91	14.950	15.311	16.140	16.705	16.872	18.929
92	15.400	15.767	16.644	17.220	17.396	19.507
93	15.865	16.234	17.165	17.750	17.936	20.099
94	16.343	16.715	17.702	18.297	18.492	20.708
95	16.836	17.210	18.255	18.858	19.064	21.333
96	17.341	17.718	18.824	19.433	19.651	21.974
97	17.859	18.238	19.408	20.021	20.253	22.630
98	18.390	18.772	20.008	20.623	20.871	23.303
99	18.934	19.319	20.624	21.239	21.505	23.992
100	19.491	19.879	21.256	21.869	22.155	24.698

Table V (cont'd)

L X-ray Energies in keV

Z	L_{II}-N_{II}=$\beta_{17/3}$	L_{II}-N_{III}=$\beta_{17/4}$	L_{II}-N_{IV}=γ_1	L_{II}-N_V=$\beta_{17/5}$	L_{II}-N_{VI}=ν_1	L_{II}-N_{VII}
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29						
30						
31						
32	1.247	1.247				
33	1.357	1.357				
34	1.471	1.471				
35	1.590	1.590				
36	1.717	1.717				
37	1.848	1.848				
38	1.987	1.987				
39	2.130	2.130				
40	2.278	2.278				
41	2.432	2.432				
42	2.590	2.590				
43	2.754	2.755				
44	2.924	2.925	2.966	2.966		
45	3.098	3.100	3.144	3.144		
46	3.276	3.279	3.327	3.327		
47	3.463	3.467	3.519	3.519		
48	3.659	3.663	3.718	3.718		
49	3.861	3.865	3.922	3.922		
50	4.067	4.071	4.132	4.132		

Table V (cont'd)

L X-ray Energies in keV

Z	L_{II}-N_{II}=$\beta_{17/3}$	L_{II}-N_{III}=$\beta_{17/4}$	L_{II}-N_{IV}=γ_1	L_{II}-N_V=$\beta_{17/5}$	L_{II}-N_{VI}=ν_1	L_{II}-N_{VII}
51	4.277	4.284	4.350	4.350		
52	4.492	4.502	4.572	4.572		
53	4.717	4.726	4.802	4.802		
54	4.950	4.959	5.039	5.039		
55	5.188	5.198	5.281	5.281		
56	5.431	5.443	5.531	5.531		
57	5.685	5.699	5.792	5.792		
58	5.943	5.960	6.059	6.059		
59	6.205	6.224	6.328	6.328		
60	6.475	6.495	6.605	6.605		
61	6.753	6.776	6.891	6.891		
62	7.041	7.065	7.185	7.185		
63	7.334	7.361	7.484	7.484		
64	7.630	7.661	7.790	7.790		
65	7.936	7.971	8.104	8.105		
66	8.248	8.287	8.424	8.426	8.579	8.579
67	8.569	8.612	8.753	8.757	8.916	8.916
68	8.899	8.944	9.088	9.095	9.261	9.261
69	9.235	9.282	9.430	9.440	9.612	9.612
70	9.581	9.627	9.780	9.790	9.970	9.970
71	9.929	9.982	10.139	10.150	10.338	10.338
72	10.300	10.355	10.515	10.526	10.722	10.722
73	10.671	10.732	10.896	10.908	11.111	11.111
74	11.049	11.117	11.285	11.299	11.505	11.507
75	11.439	11.512	11.684	11.699	11.913	11.916
76	11.839	11.917	12.094	12.111	12.332	12.335
77	12.247	12.331	12.513	12.531	12.761	12.764
78	12.664	12.754	12.942	12.960	13.199	13.202
79	13.090	13.188	13.381	13.400	13.648	13.651
80	13.527	13.635	13.829	13.849	14.107	14.111
81	13.974	14.089	14.290	14.311	14.574	14.581
82	14.436	14.557	14.765	14.787	15.057	15.063
83	14.909	15.035	15.250	15.274	15.552	15.557
84	15.393	15.537	15.746	15.771	16.061	16.066
85	15.887	16.045	16.252	16.279	16.576	16.581
86	16.389	16.565	16.769	16.796	17.097	17.103
87	16.905	17.094	17.301	17.328	17.634	17.641
88	17.432	17.626	17.846	17.874	18.188	18.196
89	17.973	18.173	18.408	18.439	18.763	18.771
90	18.525	18.725	18.980	19.017	19.349	19.358
91	19.090	19.307	19.568	19.606	19.946	19.956
92	19.675	19.903	20.168	20.208	20.556	20.567
93	20.272	20.513	20.784	20.828	21.185	21.196
94	20.887	21.140	21.421	21.469	21.830	21.842
95	21.519	21.788	22.077	22.130	22.492	22.504
96	22.167	22.456	22.751	22.810	23.170	23.182
97	22.830	23.140	23.442	23.508	23.864	23.876
98	23.509	23.840	24.152	24.223	24.574	24.587
99	24.203	24.556	24.882	24.956	25.301	25.315
100	24.912	25.289	25.632	25.707	26.045	26.060

Table V (cont'd)

L X-ray Energies in keV

Z	L_{II}-O_I=γ_8	L_{II}-O_{II}=ν_2	L_{II}-O_{III}=ν_3	L_{II}-O_{IV}=γ_6	L_{II}-O_V
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41					
42					
43					
44					
45					
46					
47					
48					
49	3.937	3.937	3.937		
50	4.152	4.154	4.154		

Table V (cont'd)

L X-ray Energies in keV

Z	L_{II}-O_I=γ_8	L_{II}-O_{II}=ν_2	L_{II}-O_{III}=ν_3	L_{II}-O_{IV}=γ_6	L_{II}-O_V
51	4.374	4.378	4.378		
52	4.600	4.607	4.607		
53	4.836	4.845	4.845		
54	5.084	5.093	5.093		
55	5.340	5.349	5.349		
56	5.602	5.609	5.610		
57	5.869	5.876	5.877		
58	6.140	6.148	6.149		
59	6.415	6.422	6.424		
60	6.695	6.703	6.705		
61	6.984	6.993	6.996		
62	7.281	7.291	7.294		
63	7.585	7.596	7.599		
64	7.894	7.906	7.910		
65	8.213	8.227	8.231		
66	8.538	8.554	8.558		
67	8.873	8.890	8.895		
68	9.215	9.235	9.239		
69	9.564	9.586	9.591		
70	9.921	9.945	9.950		
71	10.288	10.313	10.320		
72	10.673	10.700	10.708		
73	11.065	11.093	11.103		
74	11.465	11.494	11.505	11.540	11.540
75	11.875	11.906	11.918	11.955	11.955
76	12.297	12.330	12.343	12.382	12.382
77	12.729	12.764	12.778	12.820	12.820
78	13.171	13.208	13.221	13.268	13.267
79	13.624	13.662	13.676	13.726	13.726
80	14.088	14.129	14.143	14.197	14.198
81	14.563	14.606	14.622	14.682	14.684
82	15.053	15.096	15.114	15.180	15.182
83	15.553	15.597	15.616	15.688	15.690
84	16.067	16.111	16.136	16.210	16.213
85	16.590	16.635	16.665	16.743	16.748
86	17.124	17.172	17.206	17.284	17.293
87	17.671	17.724	17.762	17.837	17.850
88	18.231	18.286	18.331	18.407	18.417
89	18.812	18.869	18.919	18.996	19.004
90	19.403	19.463	19.518	19.599	19.605
91	20.004	20.067	20.129	20.214	20.222
92	20.624	20.683	20.753	20.843	20.852
93	21.260	21.317	21.394	21.491	21.499
94	21.918	21.970	22.053	22.154	22.164
95	22.589	22.643	22.730	22.835	22.846
96	23.281	23.332	23.424	23.534	23.545
97	23.987	24.038	24.135	24.250	24.261
98	24.712	24.762	24.865	24.983	24.995
99	25.453	25.505	25.613	25.734	25.747
100	26.211	26.266	26.379	26.504	26.517

Table V (cont'd)

L X-ray Energies in keV

Z	L_{III}-M_I=ℓ	L_{III}-M_{II}=t	L_{III}-M_{III}=s_1	L_{III}-M_{IV}=α_2	L_{III}-M_V=α_1	L_{III}-N_I=β_6
1						
2						
3						
4						
5						
6						
7						
8						
9						
10	.017					
11	.030					
12	.047					
13	.068					
14	.093	.099	.099			
15	.120	.128	.128			
16	.151	.161	.161			
17	.184	.195	.195			
18	.220	.233	.233			
19	.260	.276	.276			
20	.302	.321	.321			
21	.348	.369	.369			
22	.396	.421	.421			
23	.447	.475	.475			
24	.501	.533	.533	.574	.574	
25	.556	.593	.593	.638	.638	
26	.615	.655	.655	.705	.705	
27	.678	.719	.719	.775	.775	
28	.743	.787	.787	.849	.849	
29	.811	.859	.859	.926	.926	
30	.882	.932	.933	1.010	1.010	1.019
31	.957	1.009	1.012	1.098	1.098	1.113
32	1.037	1.091	1.096	1.189	1.189	1.213
33	1.119	1.177	1.183	1.282	1.282	1.315
34	1.204	1.266	1.273	1.379	1.379	1.422
35	1.294	1.360	1.367	1.479	1.480	1.533
36	1.387	1.456	1.465	1.584	1.585	1.651
37	1.483	1.557	1.566	1.693	1.695	1.774
38	1.582	1.660	1.671	1.805	1.807	1.902
39	1.685	1.767	1.780	1.921	1.923	2.035
40	1.793	1.879	1.893	2.041	2.043	2.172
41	1.903	1.993	2.009	2.164	2.166	2.313
42	2.016	2.111	2.129	2.291	2.293	2.458
43	2.132	2.232	2.251	2.421	2.424	2.607
44	2.253	2.355	2.377	2.554	2.558	2.763
45	2.377	2.483	2.508	2.692	2.697	2.923
46	2.504	2.615	2.642	2.834	2.839	3.087
47	2.633	2.749	2.780	2.978	2.984	3.255
48	2.767	2.886	2.921	3.127	3.133	3.429
49	2.904	3.028	3.066	3.279	3.287	3.608
50	3.045	3.173	3.215	3.436	3.444	3.792

Table V (cont'd)

L X-ray Energies in keV

Z	L_{III}-M_I=ℓ	L_{III}-M_{II}=t	L_{III}-M_{III}=s_1	L_{III}-M_{IV}=α_2	L_{III}-M_V=α_1	L_{III}-N_I=β_6
51	3.188	3.320	3.366	3.595	3.604	3.980
52	3.335	3.471	3.522	3.758	3.769	4.173
53	3.485	3.626	3.681	3.924	3.938	4.371
54	3.639	3.785	3.846	4.096	4.110	4.574
55	3.795	3.947	4.014	4.272	4.286	4.781
56	3.956	4.112	4.186	4.453	4.467	4.994
57	4.121	4.280	4.360	4.636	4.652	5.213
58	4.288	4.450	4.538	4.822	4.840	5.436
59	4.459	4.627	4.722	5.013	5.033	5.662
60	4.633	4.805	4.910	5.207	5.230	5.891
61	4.811	4.988	5.102	5.407	5.432	6.127
62	4.993	5.175	5.297	5.610	5.638	6.369
63	5.177	5.363	5.496	5.816	5.846	6.614
64	5.362	5.555	5.699	6.026	6.058	6.864
65	5.551	5.749	5.904	6.240	6.274	7.117
66	5.744	5.948	6.114	6.458	6.495	7.374
67	5.942	6.149	6.329	6.680	6.721	7.639
68	6.141	6.352	6.546	6.905	6.949	7.907
69	6.342	6.558	6.767	7.133	7.180	8.177
70	6.545	6.768	6.993	7.366	7.415	8.451
71	6.751	6.981	7.221	7.604	7.654	8.730
72	6.960	7.196	7.452	7.844	7.898	9.021
73	7.171	7.411	7.686	8.087	8.145	9.314
74	7.384	7.629	7.923	8.333	8.395	9.609
75	7.600	7.852	8.166	8.584	8.651	9.909
76	7.819	8.079	8.414	8.840	8.911	10.215
77	8.042	8.307	8.664	9.099	9.175	10.527
78	8.267	8.537	8.919	9.362	9.442	10.840
79	8.494	8.769	9.176	9.628	9.713	11.157
80	8.721	9.003	9.436	9.898	9.988	11.482
81	8.952	9.240	9.700	10.171	10.267	11.811
82	9.184	9.481	9.969	10.449	10.551	12.144
83	9.420	9.724	10.243	10.731	10.839	12.481
84	9.658	9.965	10.519	11.016	11.131	12.824
85	9.897	10.208	10.798	11.305	11.427	13.172
86	10.137	10.455	11.081	11.597	11.727	13.524
87	10.378	10.705	11.366	11.894	12.030	13.880
88	10.622	10.956	11.655	12.193	12.337	14.238
89	10.868	11.212	11.952	12.499	12.651	14.601
90	11.118	11.470	12.254	12.810	12.968	14.970
91	11.369	11.730	12.559	13.124	13.291	15.348
92	11.622	11.989	12.866	13.442	13.618	15.729
93	11.878	12.247	13.178	13.763	13.949	16.112
94	12.136	12.508	13.495	14.090	14.285	16.501
95	12.397	12.771	13.816	14.419	14.625	16.894
96	12.660	13.037	14.143	14.752	14.970	17.293
97	12.926	13.305	14.475	15.088	15.320	17.697
98	13.194	13.576	14.812	15.427	15.675	18.107
99	13.465	13.850	15.155	15.770	16.036	18.523
100	13.739	14.127	15.504	16.117	16.403	18.946

Table V (cont'd)

L X-ray Energies in keV

Z	L_{III}-N_{II}=s_2	L_{III}-N_{III}=s_3	L_{III}-N_{IV}=β_{15}	L_{III}-N_V=β_2	L_{III}-N_{VI}=u_1	L_{III}-N_{VII}=u_2
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27						
28						
29						
30						
31						
32	1.216	1.216				
33	1.321	1.321				
34	1.430	1.430				
35	1.544	1.544				
36	1.665	1.665				
37	1.790	1.790				
38	1.920	1.920				
39	2.054	2.054				
40	2.194	2.194				
41	2.338	2.338				
42	2.486	2.486				
43	2.638	2.639				
44	2.795	2.796	2.837	2.837		
45	2.956	2.958	3.002	3.002		
46	3.120	3.123	3.171	3.171		
47	3.290	3.294	3.346	3.346		
48	3.469	3.473	3.528	3.528		
49	3.653	3.657	3.714	3.714		
50	3.840	3.844	3.905	3.905		

Table V (cont'd)

L X-ray Energies in keV

Z	L_{III}-N_{II}=s_2	L_{III}-N_{III}=s_3	L_{III}-N_{IV}=β_{15}	L_{III}-N_V=β_2	L_{III}-N_{VI}=u_1	L_{III}-N_{VII}=u_2
51	4.028	4.035	4.101	4.101		
52	4.221	4.231	4.301	4.301		
53	4.422	4.431	4.507	4.507		
54	4.630	4.639	4.719	4.719		
55	4.840	4.850	4.933	4.933		
56	5.055	5.067	5.155	5.155		
57	5.278	5.292	5.385	5.385		
58	5.502	5.519	5.618	5.618		
59	5.729	5.748	5.852	5.852		
60	5.961	5.981	6.091	6.091		
61	6.199	6.222	6.337	6.337		
62	6.445	6.469	6.589	6.589		
63	6.693	6.720	6.843	6.843		
64	6.943	6.974	7.103	7.103		
65	7.198	7.233	7.366	7.367		
66	7.458	7.497	7.634	7.636	7.789	7.789
67	7.723	7.766	7.907	7.911	8.070	8.070
68	7.993	8.038	8.182	8.189	8.355	8.355
69	8.266	8.313	8.461	8.471	8.643	8.643
70	8.546	8.592	8.745	8.755	8.935	8.935
71	8.825	8.878	9.035	9.046	9.234	9.234
72	9.121	9.176	9.336	9.347	9.543	9.543
73	9.415	9.476	9.640	9.652	9.855	9.855
74	9.712	9.780	9.948	9.962	10.168	10.170
75	10.016	10.089	10.261	10.276	10.490	10.493
76	10.325	10.403	10.580	10.597	10.818	10.821
77	10.638	10.722	10.904	10.922	11.152	11.155
78	10.955	11.045	11.233	11.251	11.490	11.493
79	11.275	11.373	11.566	11.585	11.833	11.836
80	11.601	11.709	11.903	11.923	12.181	12.185
81	11.933	12.048	12.249	12.270	12.533	12.540
82	12.271	12.392	12.600	12.622	12.892	12.898
83	12.615	12.741	12.956	12.980	13.258	13.263
84	12.963	13.107	13.316	13.341	13.631	13.636
85	13.316	13.474	13.681	13.708	14.005	14.010
86	13.671	13.847	14.051	14.078	14.379	14.385
87	14.031	14.220	14.427	14.454	14.760	14.767
88	14.394	14.588	14.808	14.836	15.150	15.158
89	14.760	14.960	15.195	15.226	15.550	15.558
90	15.132	15.332	15.587	15.624	15.956	15.965
91	15.509	15.726	15.987	16.025	16.365	16.375
92	15.897	16.125	16.390	16.430	16.778	16.789
93	16.285	16.526	16.797	16.841	17.198	17.209
94	16.680	16.933	17.214	17.262	17.623	17.635
95	17.080	17.349	17.638	17.691	18.053	18.065
96	17.486	17.775	18.070	18.129	18.489	18.501
97	17.897	18.207	18.509	18.575	18.931	18.943
98	18.313	18.644	18.956	19.027	19.378	19.391
99	18.734	19.087	19.413	19.487	19.832	19.846
100	19.160	19.537	19.880	19.955	20.293	20.308

Table V (cont'd)

L X-ray Energies in keV

Z	L_{III}-O_I=β_7	L_{III}-O_{II}=u_3	L_{III}-O_{III}=u_4	L_{III}-O_{IV}=$\beta_{5/2}$	L_{III}-O_V=$\beta_{5/3}$
1					
2					
3					
4					
5					
6					
7					
8					
9					
10					
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12					
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35					
36					
37					
38					
39					
40					
41					
42					
43					
44					
45					
46					
47					
48					
49	3.729	3.729	3.729		
50	3.925	3.927	3.927		

Table V (cont'd)

L X-ray Energies in keV

Z	L_{III}-O_I=β_7	L_{III}-O_{II}=u_3	L_{III}-O_{III}=u_4	L_{III}-O_{IV}=$\beta_{5/2}$	L_{III}-O_V=$\beta_{5/3}$
51	4.125	4.129	4.129		
52	4.329	4.336	4.336		
53	4.541	4.550	4.550		
54	4.764	4.773	4.773		
55	4.992	5.001	5.001		
56	5.226	5.233	5.234		
57	5.462	5.469	5.470		
58	5.699	5.707	5.708		
59	5.939	5.946	5.948		
60	6.181	6.189	6.191		
61	6.430	6.439	6.442		
62	6.685	6.695	6.698		
63	6.944	6.955	6.958		
64	7.207	7.219	7.223		
65	7.475	7.489	7.493		
66	7.748	7.764	7.768		
67	8.027	8.044	8.049		
68	8.309	8.329	8.333		
69	8.595	8.617	8.622		
70	8.886	8.910	8.915		
71	9.184	9.209	9.216		
72	9.494	9.521	9.529		
73	9.809	9.837	9.847		
74	10.128	10.157	10.168	10.203	10.203
75	10.452	10.483	10.495	10.532	10.532
76	10.783	10.816	10.829	10.868	10.868
77	11.120	11.155	11.169	11.211	11.211
78	11.462	11.499	11.512	11.559	11.559
79	11.809	11.847	11.861	11.911	11.911
80	12.162	12.203	12.217	12.271	12.272
81	12.522	12.565	12.581	12.641	12.643
82	12.888	12.931	12.949	13.015	13.017
83	13.259	13.303	13.322	13.394	13.396
84	13.637	13.681	13.706	13.780	13.783
85	14.019	14.064	14.094	14.172	14.177
86	14.406	14.454	14.488	14.566	14.575
87	14.797	14.850	14.888	14.963	14.976
88	15.193	15.248	15.293	15.369	15.379
89	15.599	15.656	15.706	15.783	15.791
90	16.010	16.070	16.125	16.206	16.212
91	16.423	16.486	16.548	16.633	16.641
92	16.846	16.905	16.975	17.065	17.074
93	17.273	17.330	17.407	17.504	17.512
94	17.711	17.763	17.846	17.947	17.957
95	18.150	18.204	18.291	18.396	18.407
96	18.600	18.651	18.743	18.853	18.864
97	19.054	19.105	19.202	19.317	19.328
98	19.516	19.566	19.669	19.787	19.799
99	19.984	20.036	20.144	20.265	20.278
100	20.459	20.514	20.627	20.752	20.765

Table VI

Weighted Average L,K X-ray Energies in keV

Z	$\bar{K}_{\alpha}$	$\bar{K}_{\beta}$	$\bar{K}_{\alpha,\beta}$	$\bar{L}_{I,II,III}$	$\bar{L}_{II,III}$	$\bar{L}_{III}$
1						
2						
3	.054		.054			
4	.109		.109			
5	.184		.184			
6	.279		.279			
7	.393		.393			
8	.524		.524			
9	.675		.675			
10	.849		.849	.018	.017	.017
11	1.041		1.041	.031	.030	.030
12	1.255		1.255	.048	.047	.047
13	1.487		1.487	.069	.068	.068
14	1.739	1.838	1.742	.136	.093	.093
15	2.014	2.142	2.020	.169	.121	.120
16	2.307	2.468	2.317	.205	.152	.152
17	2.622	2.817	2.636	.243	.185	.185
18	2.957	3.191	2.977	.286	.222	.221
19	3.312	3.589	3.337	.334	.262	.261
20	3.690	4.012	3.719	.385	.305	.303
21	4.088	4.459	4.124	.438	.351	.349
22	4.508	4.931	4.550	.495	.400	.397
23	4.949	5.427	4.998	.555	.452	.449
24	5.411	5.947	5.467	.582	.575	.572
25	5.895	6.492	5.959	.646	.639	.636
26	6.400	7.059	6.472	.714	.707	.702
27	6.925	7.649	7.006	.785	.777	.772
28	7.472	8.265	7.563	.859	.852	.846
29	8.041	8.907	8.142	.937	.929	.923
30	8.631	9.572	8.744	1.022	1.014	1.006
31	9.243	10.263	9.367	1.111	1.103	1.094
32	9.876	10.984	10.015	1.207	1.195	1.185
33	10.532	11.729	10.687	1.302	1.290	1.278
34	11.210	12.501	11.380	1.402	1.388	1.375
35	11.907	13.296	12.096	1.504	1.490	1.475
36	12.630	14.120	12.837	1.612	1.597	1.580
37	13.375	14.971	13.602	1.724	1.708	1.690
38	14.142	15.849	14.390	1.840	1.823	1.802
39	14.933	16.754	15.204	1.960	1.942	1.918
40	15.746	17.687	16.040	2.084	2.065	2.038
41	16.584	18.647	16.900	2.212	2.191	2.160
42	17.443	19.633	17.787	2.343	2.321	2.287
43	18.327	20.647	18.696	2.479	2.455	2.418
44	19.235	21.687	19.632	2.654	2.635	2.594
45	20.167	22.759	20.593	2.802	2.782	2.736
46	21.123	23.859	21.581	2.953	2.933	2.882
47	22.104	24.987	22.592	3.109	3.087	3.031
48	23.109	26.143	23.630	3.270	3.247	3.185
49	24.139	27.382	24.750	3.439	3.412	3.346
50	25.193	28.601	25.843	3.609	3.581	3.508

Table VI (cont'd)

Weighted Average L, K X-ray Energies in keV

Z	$\bar{K}_{\alpha}$	$\bar{K}_{\beta}$	$\bar{K}_{\alpha,\beta}$	$\bar{L}_{I,II,III}$	$\bar{L}_{II,III}$	$\bar{L}_{III}$
51	26.274	29.851	26.965	3.783	3.753	3.673
52	27.380	31.128	28.116	3.961	3.930	3.843
53	28.512	32.437	29.291	4.145	4.111	4.017
54	29.669	33.777	30.491	4.333	4.298	4.195
55	30.854	35.149	31.726	4.526	4.489	4.377
56	32.065	36.553	32.988	4.724	4.685	4.564
57	33.302	37.986	34.275	4.928	4.886	4.756
58	34.569	39.453	35.593	5.136	5.092	4.950
59	35.864	40.953	36.940	5.348	5.302	5.149
60	37.185	42.484	38.315	5.565	5.517	5.352
61	38.535	44.049	39.721	5.789	5.738	5.561
62	39.914	45.649	41.161	6.018	5.963	5.773
63	41.323	47.283	42.633	6.250	6.192	5.988
64	42.761	48.949	44.132	6.486	6.426	6.207
65	44.229	50.650	45.665	6.729	6.665	6.430
66	45.728	52.384	47.226	6.980	6.911	6.659
67	47.257	54.155	48.819	7.234	7.161	6.892
68	48.818	55.963	50.448	7.492	7.416	7.127
69	50.410	57.806	52.108	7.754	7.674	7.365
70	52.035	59.687	53.802	8.022	7.937	7.607
71	53.693	61.607	55.534	8.296	8.206	7.854
72	55.382	63.562	57.296	8.576	8.482	8.106
73	57.106	65.556	59.099	8.861	8.762	8.361
74	58.864	67.586	60.936	9.169	9.065	8.622
75	60.655	69.659	62.807	9.467	9.357	8.886
76	62.482	71.775	64.718	9.771	9.656	9.155
77	64.346	73.933	66.668	10.081	9.960	9.428
78	66.246	76.131	68.655	10.396	10.268	9.703
79	68.185	78.372	70.685	10.717	10.583	9.983
80	70.160	80.656	72.747	11.044	10.903	10.267
81	72.176	82.985	74.856	11.375	11.226	10.551
82	74.228	85.357	77.002	11.719	11.563	10.849
83	76.321	87.774	79.194	12.067	11.903	11.147
84	78.460	90.243	81.426	12.421	12.249	11.448
85	80.636	92.754	83.701	12.781	12.601	11.754
86	82.855	95.315	86.024	13.147	12.958	12.063
87	85.124	97.930	88.396	13.521	13.322	12.376
88	87.437	100.593	90.814	13.902	13.693	12.693
89	89.790	103.310	93.279	14.292	14.074	13.017
90	92.190	106.077	95.791	14.690	14.461	13.345
91	94.643	108.906	98.347	15.096	14.856	13.679
92	97.143	111.786	100.964	15.509	15.257	14.016
93	99.693	114.720	103.631	15.931	15.667	14.357
94	102.295	117.716	106.354	16.362	16.086	14.704
95	104.952	120.775	109.136	16.803	16.513	15.056
96	107.670	123.903	111.980	17.252	16.949	15.413
97	110.450	127.102	114.891	17.711	17.392	15.775
98	113.298	130.377	117.867	18.178	17.844	16.142
99	116.217	133.730	120.922	18.655	18.305	16.516
100	119.210	137.167	124.054	19.141	18.775	16.895

Table VII

K, L Relative Intensities

X-ray Line	Relative Intensity	X-ray Line	Relative Intensity
L_I-M_I=$L\beta_{5/1}$	.1	L_{II}-O_I=$L\gamma_8$	.1
L_I-M_{II}=$L\beta_4$	6.4	L_{II}-O_{II}=$L\nu_2$	.1
L_I-M_{III}=$L\beta_3$	8.5	L_{II}-O_{III}=$L\nu_3$	.1
L_I-M_{IV}=$L\beta_{10}$	.5	L_{II}-O_{IV}=$L\gamma_6$	1.5
L_I-M_V=$L\beta_{9/1}$	.2	L_{II}-O_V	.1
L_I-N_I=$L\beta_{9/2}$	.2		
L_I-N_{II}=$L\gamma_2$	1.5	L_{III}-M_I=$L\ell$	3.2
L_I-N_{III}=$L\gamma_3$	2.0	L_{III}-M_{II}=Lt	.1
L_I-N_{IV}=$L\beta_{9/3}$	.2	L_{III}-M_{III}=Ls_1	.1
L_I-N_V=$L\gamma_{11/1}$	.1	L_{III}-M_{IV}=$L\alpha_2$	12.0
L_I-N_{VI}=$L\gamma_{11/2}$	.1	L_{III}-M_V=$L\alpha_1$	100.0
L_I-N_{VII}=$L\gamma_{11/3}$	.1	L_{III}-N_I=$L\beta_6$	1.5
L_I-O_I=$L\gamma_{11/4}$	.1	L_{III}-N_{II}=Ls_2	.1
L_I-O_{II}=$L\gamma_{4/1}$	.3	L_{III}-N_{III}=Ls_3	.1
L_I-O_{III}=$L\gamma_{4/2}$	.3	L_{III}-N_{IV}=$L\beta_{15}$	.1
L_I-O_{IV}=$L\gamma_{11/5}$	.1	L_{III}-N_V=$L\beta_2$	20.0
L_I-O_V=$L\gamma_{11/6}$	.1	L_{III}-N_{VI}=Lu_1	.1
		L_{III}-N_{VII}=Lu_2	.1
L_{II}-M_I=$L\eta$	1.5	L_{III}-O_I=$L\beta_7$	.5
L_{II}-M_{II}=$L\gamma_{11/7}$	.1	L_{III}-O_{II}=Lu_3	.1
L_{II}-M_{III}=$L\beta_{17/1}$	.1	L_{III}-O_{III}=Lu_4	.1
L_{II}-M_{IV}=$L\beta_1$	55.0	L_{III}-O_{IV}=$L\beta_{5/2}$	.1
L_{II}-M_V=$L\beta_{17/2}$	.1	L_{III}-O_V=$L\beta_{5/3}$	.1
L_{II}-N_I=$L\gamma_5$	.5		
L_{II}-N_{II}=$L\beta_{17/3}$	.1		
L_{II}-N_{III}=$L\beta_{17/4}$	.1		
L_{II}-N_{IV}=$L\gamma_1$	1.0		
L_{II}-N_V=$L\beta_{17/5}$	.1		
L_{II}-N_{VI}=$L\nu_1$	.1	K-L_{II}=$K\alpha_2$	52.0
L_{II}-N_{VII}	.1	K-L_{III}=$K\alpha_1$	100.0

Table VII (cont'd)

K, L Relative Intensities

Z	$K\text{-}M_{II}=K_{\beta_3}$	$K\text{-}M_{III}=K_{\beta_1}$	$K\text{-}M_{IV}=K_{\beta\ 5/1}$ $K\text{-}M_{V}=K_{\beta\ 5/2}$	$K\text{-}N_{II}=K_{\beta\ 2/1}$ $K\text{-}N_{III}=K_{\beta\ 2/2}$	$K\text{-}N_{IV}=K_{\beta\ 4/1}$ $K\text{-}N_{V}=K_{\beta\ 4/2}$	$K\text{-}O_{II}=K_{\beta\ 2/3}$ $K\text{-}O_{III}=K_{\beta\ 2/4}$
1						
2						
3						
4						
5						
6						
7						
8						
9						
10						
11						
12						
13						
14	1.5	3.1				
15	2.7	5.3				
16	3.4	6.9				
17	4.1	8.1				
18	4.5	9.1				
19	4.9	9.8				
20	5.2	10.3				
21	5.4	10.9				
22	5.6	11.2				
23	5.8	11.5				
24	5.9	11.8				
25	6.0	12.1				
26	6.2	12.5				
27	6.4	12.7				
28	6.6	13.1	.01			
29	6.7	13.4	.015			
30	6.9	13.7	.02			
31	7.0	14.0	.03			
32	7.1	14.2	.035	.2		.2
33	7.3	14.6	.04	.3		.3
34	7.4	14.8	.05	.4		.4
35	7.6	15.2	.055	.5		.5
36	7.7	15.5	.065	.6		.6
37	7.9	15.8	.07	.7		.7
38	8.0	16.1	.08	.8		.8
39	8.2	16.4	.085	.9		.9
40	8.3	16.6	.09	1.0		1.0
41	8.4	16.8	.10	1.07		1.07
42	8.6	17.2	.105	1.15		1.15
43	8.7	17.4	.11	1.25		1.25
44	8.9	17.7	.115	1.27		1.27
45	9.0	17.9	.12	1.35		1.35
46	9.1	18.2	.13	1.42	.075	1.42
47	9.2	18.4	.14	1.47	.075	1.47
48	9.4	18.6	.145	1.52	.075	1.52
49	9.5	19.0	.155	1.57	.075	1.57
50	9.6	19.2	.16	1.62	.075	1.62

Table VII (cont'd)

K, L Relative Intensities

Z	$K\text{-}M_{II}=K\beta_3$	$K\text{-}M_{III}=K\beta_1$	$K\text{-}M_{IV}=K\beta_{5/1}$ $K\text{-}M_{V}=K\beta_{5/2}$	$K\text{-}N_{II}=K\beta_{2/1}$ $K\text{-}N_{III}=K\beta_{2/2}$	$K\text{-}N_{IV}=K\beta_{4/1}$ $K\text{-}N_{V}=K\beta_{4/2}$	$K\text{-}O_{II}=K\beta_{2/3}$ $K\text{-}O_{III}=K\beta_{2/4}$
51	9.7	19.4	.17	1.70	.075	1.70
52	9.9	19.8	.175	1.72	.075	1.72
53	10.0	20.0	.18	1.77	.075	1.77
54	10.1	20.2	.185	1.80	.075	1.80
55	10.3	20.5	.195	1.85	.075	1.85
56	10.4	20.8	.205	1.90	.075	1.90
57	10.5	21.0	.21	1.95	.075	1.95
58	10.6	21.2	.215	1.98	.075	1.98
59	10.7	21.4	.225	2.01	.075	2.01
60	10.8	21.6	.23	2.05	.075	2.05
61	10.9	21.8	.235	2.07	.075	2.07
62	11.0	22.1	.245	2.12	.075	2.12
63	11.2	22.3	.25	2.17	.075	2.17
64	11.3	22.5	.26	2.20	.075	2.20
65	11.4	22.8	.27	2.22	.075	2.22
66	11.5	23.0	.275	2.23	.075	2.23
67	11.6	23.2	.285	2.25	.075	2.25
68	11.7	23.4	.29	2.27	.075	2.27
69	11.8	23.6	.295	2.29	.075	2.29
70	11.9	23.8	.30	2.30	.075	2.30
71	12.0	24.0	.305	2.32	.08	2.32
72	12.1	24.2	.31	2.33	.08	2.33
73	12.2	24.5	.315	2.35	.085	2.35
74	12.4	24.7	.32	2.36	.085	2.36
75	12.5	24.9	.33	2.38	.09	2.38
76	12.6	25.1	.34	2.40	.09	2.40
77	12.7	25.3	.345	2.42	.095	2.42
78	12.8	25.5	.355	2.43	.10	2.43
79	12.9	25.8	.36	2.45	.11	2.45
80	13.0	25.9	.37	2.46	.12	2.46
81	13.1	26.1	.375	2.47	.13	2.47
82	13.2	26.3	.38	2.47	.15	2.47
83	13.3	26.6	.385	2.48	.16	2.48
84	13.4	26.7	.395	2,48	.17	2.48
85	13.5	26.9	.40	2.48	.18	2.48
86	13.6	27.1	.405	2.49	.19	2.49
87	13.7	27.3	.41	2.49	.20	2.49
88	13.8	27.5	.42	2.49	.20	2.49
89	13.9	27.7	.43	2.50	.21	2.50
90	14.0	27.9	.435	2.50	.21	2.50
91	14.0	28.0	.44	2.50	.22	2.50
92	14.1	28.2	.45	2.50	.23	2.50
93	14.2	28.4	.455	2.50	.23	2.50
94	14.3	28.6	.46	2.50	.24	2.50
95	14.4	28.8	.47	2.50	.25	2.50
96	14.5	29.0	.475	2.50	.25	2.50
97	14.6	29.2	.48	2.50	.26	2.50
98	14.7	29.3	.49	2.50	.26	2.50
99	14.8	29.5	.495	2.50	.27	2.50
100	14.9	29.7	.50	2.50	.27	2.50

Table VIII

K, L Fluorescence Yields

Z	K	L	Z	K	L
1			51	.852	.123
2			52	.860	.129
3			53	.868	.134
4			54	.875	.140
5			55	.882	.146
6			56	.889	.151
7	.001		57	.894	.158
8	.003		58	.899	.162
9	.007		59	.903	.169
10	.010		60	.909	.173
11	.013		61	.912	.180
12	.020		62	.916	.185
13	.030		63	.920	.191
14	.041		64	.922	.197
15	.051		65	.926	.202
16	.069		66	.929	.209
17	.086		67	.931	.214
18	.105		68	.934	.220
19	.129		69	.937	.225
20	.151		70	.939	.230
21	.174		71	.941	.237
22	.200		72	.942	.242
23	.227		73	.944	.248
24	.253		74	.946	.293
25	.282		75	.948	.316
26	.312		76	.949	.334
27	.341		77	.950	.349
28	.371		78	.951	.361
29	.404		79	.952	.372
30	.435		80	.953	.382
31	.466	.010	81	.954	.391
32	.499	.016	82	.955	.400
33	.531	.021	83	.956	.408
34	.567	.027	84	.957	.414
35	.595	.032	85	.958	.421
36	.624	.039	86	.958	.427
37	.649	.044	87	.959	.431
38	.672	.049	88	.960	.437
39	.693	.055	89	.960	.439
40	.711	.060	90	.960	.444
41	.730	.066	91	.960	.447
42	.747	.072	92	.961	.449
43	.761	.078	93	.962	.452
44	.775	.083	94	.962	.454
45	.789	.089	95	.963	.458
46	.801	.095	96	.963	.460
47	.812	.100	97	.964	.461
48	.822	.106	98	.964	.463
49	.834	.112	99	.964	.465
50	.843	.118	100	.965	.467

1 HYDROGEN
(barns/atom)

E (MeV)	KN $\sigma_{inc,t}$	BD $\sigma_{inc,t}$	KN $\sigma_{inc,a}$	BD $\sigma_{inc,a}$	KN $\sigma_{inc,s}$	BD $\sigma_{inc,s}$	σ_{coh}	$\sigma_{\gamma n}$	$\sigma_{\gamma e}$	$\sigma_{\gamma,:}$	$\sigma_{\gamma,a}$	$\sigma_{r,t}$	$\sigma_{r,a}$	$\sigma_{tot,t}$	$\sigma_{tot,t-coh}$	$\sigma_{tot,a}$	$\sigma_{tot,en}$
.001	.663	.0861	.00129	.000168	.661	.0859	.571					15.8	15.8	16.5	15.9	15.8	15.8
.0015	.661	.166	.00193	.000484	.659	.166	.493					5.40	5.40	6.06	5.57	5.40	5.40
.002	.660	.248	.00256	.000962	.657	.247	.411					2.43	2.43	3.09	2.68	2.43	2.43
.003	.657	.378	.00381	.00219	.654	.376	.275					.760	.760	1.41	1.14	.764	.762
.004	.655	.463	.00504	.00356	.650	.459	.188					.299	.299	.950	.762	.304	.303
.005	.652	.515	.00625	.00493	.646	.510	.134					.140	.140	.789	.655	.146	.145
.006	.650	.547	.00744	.00626	.643	.541	.0998					.0727	.0727	.720	.620	.0801	.0790
.008	.645	.582	.00976	.00881	.635	.573	.0612					.0250	.0250	.668	.607	.0348	.0338
.01	.640	.598	.0120	.0112	.628	.587	.0412					.0104	.0104	.650	.608	.0224	.0216
.015	.629	.609	.0174	.0168	.612	.592	.0194					.00200	.00200	.630	.611	.0194	.0188
.02	.618	.606	.0223	.0219	.596	.584	.0112							.617	.606	.0223	.0219
.03	.597	.592	.0311	.0308	.566	.561	.00507							.597	.592	.0311	.0308
.04	.579	.576	.0386	.0384	.540	.538	.00287							.579	.576	.0386	.0384
.05	.561	.559	.0453	.0451	.516	.514	.00185							.561	.559	.0453	.0451
.06	.546	.544	.0512	.0510	.494	.493	.00129							.545	.544	.0512	.0510
.08	.517	.516	.0606	.0604	.457	.456								.516	.516	.0606	.0604
.1	.493	.492	.0680	.0679	.425	.424								.492	.492	.0680	.0679
.15	.444	.443	.0805	.0804	.363	.363								.443	.443	.0805	.0804
.2	.406	.406	.0879	.0878	.319	.318								.406	.406	.0879	.0878
.3	.353	.353	.0953	.0952	.258	.258								.353	.353	.0953	.0952
.4	.317	.317	.0981	.0983	.219	.219								.317	.317	.0981	.0983
.5	.289	.289	.0986	.0991	.190	.190								.289	.289	.0986	.0991
.6	.267	.267	.0983	.0983	.169	.169								.267	.267	.0983	.0983
.8	.235	.235	.0961	.0956	.139	.139								.235	.235	.0961	.0956
1.	.211	.211	.0929	.0928	.118	.118								.211	.211	.0929	.0928
1.5	.172	.172	.0849	.0851	.0867	.0869		.000044		.000044	.000014			.172	.172	.0849	.0851
2.	.146	.146	.0777	.0774	.0687	.0686		.000181		.000181	.000089			.146	.146	.0779	.0775
3.	.115	.115	.0664	.0664	.0486	.0486		.000514	.000040	.000554	.000367			.116	.116	.0670	.0668
4.	.0962	.0962	.0584	.0582	.0378	.0380		.000825	.000164	.000989	.000744			.0972	.0972	.0594	.0589
5.	.0831	.0831	.0522	.0521	.0309	.0310		.00110	.000324	.00142	.00115			.0845	.0845	.0536	.0533
6.	.0734	.0734	.0473	.0471	.0261	.0263		.00135	.000495	.00184	.00155			.0752	.0752	.0491	.0486
8.	.0601	.0601	.0401	.0400	.0200	.0201		.00177	.000848	.00262	.00233			.0627	.0627	.0427	.0423
10.	.0511	.0511	.0350	.0350	.0162	.0161		.00211	.00117	.00328	.00300			.0544	.0544	.0383	.0380
15.	.0379	.0379	.0269	.0268	.0110	.0111		.00280	.00182	.00462	.00430			.0425	.0425	.0315	.0311
20.	.0304	.0304	.0221	.0219	.00831	.00854		.00330	.00233	.00563	.00529			.0360	.0360	.0277	.0272
30.	.0221	.0221	.0165	.0162	.00559	.00592		.00399	.00311	.00710	.00669			.0292	.0292	.0236	.0229
40.	.0176	.0176	.0134	.0130	.00422	.00465		.00447	.00367	.00814	.00766			.0257	.0257	.0215	.0207
50.	.0147	.0147	.0113	.0108	.00338	.00390		.00484	.00413	.00897	.00843			.0237	.0237	.0203	.0193
60.	.0126	.0126	.00981	.00924	.00283	.00336		.00513	.00448	.00961	.00899			.0222	.0222	.0194	.0182
80.	.00997	.00997	.00784	.00726	.00213	.00271		.00560	.00508	.0107	.00990			.0207	.0207	.0185	.0172
100.	.00828	.00828	.00657	.00591	.00171	.00237		.00595	.00557	.0115	.0106			.0198	.0198	.0181	.0165

1 HYDROGEN
(cm^2/g = 0.5975 x barns/atom)

E (MeV)	$(\frac{\mu}{\rho})^{KN}_{inc,t}$	$(\frac{\mu}{\rho})^{BD}_{inc,t}$	$(\frac{\mu}{\rho})^{KN}_{inc,a}$	$(\frac{\mu}{\rho})^{BD}_{inc,a}$	$(\frac{\mu}{\rho})^{KN}_{inc,s}$	$(\frac{\mu}{\rho})^{BD}_{inc,s}$	$(\frac{\mu}{\rho})_{coh}$	$(\frac{\mu}{\rho})_{\kappa n}$	$(\frac{\mu}{\rho})_{\kappa e}$	$(\frac{\mu}{\rho})_{\kappa,t}$	$(\frac{\mu}{\rho})_{\kappa,a}$	$(\frac{\mu}{\rho})_{r,t}$	$(\frac{\mu}{\rho})_{r,a}$	$(\frac{\mu}{\rho})_{tot,t}$	$(\frac{\mu}{\rho})_{tot,t-coh}$	$(\frac{\mu}{\rho})_{tot,a}$	$(\frac{\mu}{\rho})_{tot,en}$
.001	.396	.0514	.000771	.000100	.395	.0513	.341					9.44	9.44	9.86	9.50	9.44	9.44
.0015	.395	.0992	.00115	.000289	.394	.0992	.295					3.23	3.23	3.62	3.33	3.23	3.23
.002	.394	.148	.00153	.000575	.393	.148	.246					1.45	1.45	1.85	1.60	1.45	1.45
.003	.393	.226	.00228	.00131	.391	.225	.164					.454	.454	.842	.681	.456	.455
.004	.391	.277	.00301	.00213	.388	.274	.112					.179	.179	.468	.455	.182	.181
.005	.390	.308	.00373	.00295	.386	.305	.0801					.0836	.0836	.471	.391	.0872	.0866
.006	.388	.327	.00445	.00374	.384	.323	.0596					.0434	.0434	.430	.370	.0479	.0472
.008	.385	.348	.00583	.00526	.379	.342	.0366					.0149	.0149	.399	.363	.0208	.0202
.01	.382	.357	.00717	.00669	.375	.351	.0246					.00621	.00621	.388	.363	.0134	.0129
.015	.376	.364	.0104	.0100	.366	.354	.0116					.00119	.00119	.376	.365	.0116	.0112
.02	.369	.362	.0133	.0131	.356	.349	.00669							.369	.362	.0133	.0131
.03	.357	.354	.0186	.0184	.338	.335	.00303							.357	.354	.0186	.0184
.04	.346	.344	.0231	.0229	.323	.321	.00171							.346	.344	.0231	.0229
.05	.335	.334	.0271	.0269	.308	.307	.00111							.335	.334	.0271	.0269
.06	.326	.325	.0306	.0305	.295	.295	.000771							.326	.325	.0306	.0305
.08	.309	.308	.0362	.0361	.273	.272								.308	.308	.0362	.0361
.1	.295	.294	.0406	.0406	.254	.253								.294	.294	.0406	.0406
.15	.265	.265	.0481	.0480	.217	.217								.265	.265	.0481	.0480
.2	.243	.243	.0525	.0525	.191	.190								.243	.243	.0525	.0525
.3	.211	.211	.0569	.0569	.154	.154								.211	.211	.0569	.0569
.4	.189	.189	.0586	.0587	.131	.131								.189	.189	.0586	.0587
.5	.173	.173	.0589	.0592	.114	.114								.173	.173	.0589	.0592
.6	.160	.160	.0587	.0587	.101	.101								.160	.160	.0587	.0587
.8	.140	.140	.0574	.0571	.0831	.0831								.140	.140	.0574	.0571
1.	.126	.126	.0555	.0554	.0705	.0705								.126	.126	.0555	.0554
1.5	.103	.103	.0507	.0508	.0518	.0519		.0000263		.0000263	.0000084			.103	.103	.0507	.0508
2.	.0872	.0872	.0464	.0462	.0410	.0410		.000108		.000108	.000053			.0872	.0872	.0465	.0463
3.	.0687	.0687	.0397	.0397	.0290	.0290		.000307	.000024	.000331	.000219			.0693	.0693	.0400	.0399
4.	.0575	.0575	.0349	.0348	.0226	.0227		.000493	.000098	.000591	.000445			.0581	.0581	.0355	.0352
5.	.0497	.0497	.0312	.0311	.0185	.0185		.000657	.000194	.000848	.000687			.0505	.0505	.0320	.0318
6.	.0439	.0439	.0283	.0281	.0156	.0157		.000807	.000296	.00110	.000926			.0449	.0449	.0293	.0290
8.	.0359	.0359	.0240	.0239	.0119	.0120		.00106	.000507	.00157	.00139			.0375	.0375	.0255	.0253
10.	.0305	.0305	.0209	.0209	.00968	.00962		.00126	.000699	.00196	.00179			.0325	.0325	.0229	.0227
15.	.0226	.0226	.0161	.0160	.00657	.00663		.00167	.00109	.00276	.00257			.0254	.0254	.0188	.0186
20.	.0182	.0182	.0132	.0131	.00497	.00510		.00197	.00139	.00336	.00316			.0215	.0215	.0166	.0163
30.	.0132	.0132	.00986	.00968	.00334	.00354		.00238	.00186	.00424	.00400			.0174	.0174	.0141	.0137
40.	.0105	.0105	.00801	.00777	.00252	.00278		.00267	.00219	.00486	.00458			.0154	.0154	.0128	.0124
50.	.00878	.00878	.00675	.00645	.00202	.00233		.00289	.00247	.00536	.00504			.0142	.0142	.0121	.0115
60.	.00753	.00753	.00586	.00552	.00169	.00201		.00307	.00268	.00574	.00537			.0133	.0133	.0116	.0109
80.	.00596	.00596	.00468	.00434	.00127	.00162		.00335	.00304	.00639	.00592			.0124	.0124	.0111	.0103
100.	.00495	.00495	.00393	.00353	.00102	.00142		.00356	.00333	.00687	.00633			.0118	.0118	.0108	.00986

2 HELIUM
(barns/atom)

E (MeV)	$\sigma^{KN}_{inc,t}$	$\sigma^{BD}_{inc,t}$	$\sigma^{KN}_{inc,a}$	$\sigma^{BD}_{inc,a}$	$\sigma^{KN}_{inc,s}$	$\sigma^{BD}_{inc,s}$	σ_{coh}	$\sigma_{\gamma n}$	$\sigma_{\gamma e}$	$\sigma_{\gamma,t}$	$\sigma_{\gamma,a}$	$\sigma_{\gamma,t}$	$\sigma_{\gamma,a}$	$\sigma_{tot,t}$	$\sigma_{tot,t-coh}$	$\sigma_{tot,a}$	$\sigma_{tot,en}$
.001	1.33	.0728	.00258	.000142	1.32	.0727	2.49					334.	334.	337.	334.	334.	334.
.0015	1.32	.152	.00386	.000443	1.32	.152	2.33					110.	110.	112.	110.	110.	110.
.002	1.32	.248	.00512	.000962	1.31	.247	2.14					49.1	49.1	51.5	49.3	49.1	49.1
.003	1.31	.447	.00762	.00259	1.31	.444	1.72					14.7	14.7	16.9	15.1	14.7	14.7
.004	1.31	.627	.0101	.00482	1.30	.622	1.35					6.03	6.03	8.01	6.66	6.04	6.03
.005	1.30	.767	.0125	.00735	1.29	.760	1.06					3.03	3.03	4.86	3.80	3.04	3.04
.006	1.30	.873	.0149	.0100	1.29	.863	.839					1.61	1.61	3.32	2.48	1.62	1.62
.008	1.29	1.01	.0195	.0153	1.27	.995	.554					.574	.574	2.14	1.58	.593	.589
.01	1.28	1.08	.0240	.0202	1.26	1.06	.389					.246	.246	1.71	1.33	.270	.266
.015	1.26	1.16	.0348	.0321	1.22	1.13	.195					.0520	.0520	1.41	1.21	.0868	.0841
.02	1.24	1.18	.0446	.0426	1.19	1.14	.116					.0171	.0171	1.31	1.20	.0617	.0597
.03	1.19	1.17	.0622	.0609	1.13	1.11	.0541					.0036	.0036	1.23	1.17	.0658	.0645
.04	1.16	1.14	.0772	.0760	1.08	1.06	.0310					.00118	.00118	1.17	1.14	.0784	.0772
.05	1.12	1.11	.0906	.0896	1.03	1.02	.0200							1.13	1.11	.0906	.0896
.06	1.09	1.08	.102	.101	.989	.979	.0140							1.09	1.08	.102	.101
.08	1.03	1.03	.121	.121	.913	.909	.00793							1.04	1.03	.121	.121
.1	.985	.983	.136	.136	.850	.847	.00510							.988	.983	.136	.136
.15	.887	.886	.161	.161	.726	.725	.00229							.888	.886	.161	.161
.2	.813	.812	.176	.176	.637	.636	.00130							.813	.812	.176	.176
.3	.707	.706	.191	.190	.516	.516								.706	.706	.191	.190
.4	.633	.633	.196	.196	.437	.437								.633	.633	.196	.196
.5	.578	.578	.197	.198	.381	.380								.578	.578	.197	.198
.6	.535	.535	.197	.197	.338	.338								.535	.535	.197	.197
.8	.470	.470	.192	.191	.278	.279								.470	.470	.192	.191
1.	.422	.422	.186	.186	.237	.236								.422	.422	.186	.186
1.5	.343	.343	.170	.170	.173	.173		.000177		.000177	.000056			.343	.343	.170	.170
2.	.293	.293	.155	.155	.137	.138		.000715		.000715	.00035			.294	.294	.156	.155
3.	.230	.230	.133	.133	.0973	.0973		.00205	.000080	.00213	.00141			.232	.232	.135	.134
4.	.192	.192	.117	.116	.0756	.0758		.00332	.000328	.00365	.00274			.196	.196	.121	.119
5.	.166	.166	.104	.104	.0618	.0619		.00441	.000646	.00506	.00407			.171	.171	.109	.108
6.	.147	.147	.0946	.0944	.0523	.0526		.00545	.00099	.00644	.00542			.153	.153	.101	.0998
8.	.120	.120	.0801	.0794	.0400	.0406		.00710	.00169	.00879	.00781			.129	.129	.0889	.0872
10.	.102	.102	.0699	.0695	.0324	.0325		.00851	.00233	.0108	.00991			.113	.113	.0807	.0794
15.	.0757	.0757	.0538	.0522	.0220	.0235		.0111	.00363	.0147	.0137			.0904	.0904	.0685	.0689
20.	.0608	.0608	.0442	.0426	.0166	.0182		.0132	.00472	.0179	.0167			.0787	.0787	.0621	.0593
30.	.0442	.0442	.0331	.0313	.0112	.0129		.0160	.00630	.0223	.0207			.0665	.0665	.0554	.0520
40.	.0352	.0352	.0267	.0248	.00844	.0104		.0180	.00750	.0255	.0237			.0607	.0607	.0522	.0485
50.	.0294	.0294	.0226	.0206	.00676	.00882		.0192	.00836	.0276	.0256			.0570	.0570	.0502	.0462
60.	.0253	.0253	.0196	.0175	.00566	.00784		.0204	.00911	.0295	.0274			.0548	.0548	.0491	.0449
80.	.0199	.0199	.0157	.0134	.00426	.00647		.0221	.0102	.0323	.0299			.0522	.0522	.0480	.0433
100.	.0166	.0166	.0131	.0109	.00341	.00573		.0237	.0112	.0349	.0320			.0515	.0515	.0480	.0429

2 HELIUM

(cm^2/g = 0.1505 x barns/atom)

E (MeV)	$(\frac{\mu}{\rho})^{KN}_{inc,t}$	$(\frac{\mu}{\rho})^{BD}_{inc,t}$	$(\frac{\mu}{\rho})^{KN}_{inc,a}$	$(\frac{\mu}{\rho})^{BD}_{inc,a}$	$(\frac{\mu}{\rho})^{KN}_{inc,s}$	$(\frac{\mu}{\rho})^{BD}_{inc,s}$	$(\frac{\mu}{\rho})_{coh}$	$(\frac{\mu}{\rho})_{\kappa n}$	$(\frac{\mu}{\rho})_{\kappa e}$	$(\frac{\mu}{\rho})_{\kappa,t}$	$(\frac{\mu}{\rho})_{\kappa,a}$	$(\frac{\mu}{\rho})_{r,t}$	$(\frac{\mu}{\rho})_{r,a}$	$(\frac{\mu}{\rho})_{tot,t}$	$(\frac{\mu}{\rho})_{tot,t-coh}$	$(\frac{\mu}{\rho})_{tot,a}$	$(\frac{\mu}{\rho})_{tot,en}$
.001	.200	.0110	.000388	.0000214	.199	.0109	.375					50.3	50.3	50.7	50.3	50.3	50.3
.0015	.199	.0229	.000581	.0000667	.199	.0229	.351					16.6	16.6	16.9	16.6	16.6	16.6
.002	.199	.0373	.000771	.000145	.197	.0372	.322					7.39	7.39	7.75	7.42	7.39	7.39
.003	.197	.0673	.00115	.000390	.197	.0668	.259					2.21	2.21	2.54	2.27	2.21	2.21
.004	.197	.0944	.00152	.000725	.196	.0936	.203					.908	.908	1.21	1.00	.909	.908
.005	.196	.115	.00188	.00111	.194	.114	.160					.456	.456	.731	.572	.458	.458
.006	.196	.131	.00224	.00150	.194	.130	.126					.242	.242	.500	.373	.244	.244
.008	.194	.152	.00293	.00230	.191	.150	.0834					.0864	.0864	.322	.238	.0892	.0886
.01	.193	.163	.00361	.00304	.190	.160	.0585					.0370	.0370	.257	.200	.0406	.0400
.015	.190	.175	.00524	.00483	.184	.170	.0293					.00783	.00783	.212	.182	.0131	.0127
.02	.187	.178	.00671	.00641	.179	.172	.0175					.00257	.00257	.197	.181	.00929	.00898
.03	.179	.176	.00936	.00917	.170	.167	.00814					.000542	.000542	.185	.176	.00990	.00971
.04	.175	.172	.0116	.0114	.163	.160	.00467					.000178	.000178	.176	.172	.0118	.0116
.05	.169	.167	.0136	.0135	.155	.154	.00301							.170	.167	.0136	.0135
.06	.164	.163	.0154	.0152	.149	.147	.00211							.164	.163	.0154	.0152
.08	.155	.155	.0182	.0182	.137	.137	.00119							.157	.155	.0182	.0182
.1	.148	.148	.0205	.0205	.128	.127	.000768							.149	.148	.0205	.0205
.15	.133	.133	.0242	.0242	.109	.109	.000345							.134	.133	.0242	.0242
.2	.122	.122	.0265	.0265	.0959	.0957	.000196							.122	.122	.0265	.0265
.3	.106	.106	.0287	.0286	.0777	.0777								.106	.106	.0287	.0286
.4	.0953	.0953	.0295	.0295	.0658	.0658								.0953	.0953	.0295	.0295
.5	.0870	.0870	.0296	.0298	.0573	.0572								.0870	.0870	.0296	.0298
.6	.0805	.0805	.0296	.0296	.0509	.0509								.0805	.0805	.0296	.0296
.8	.0707	.0707	.0289	.0287	.0418	.0420								.0707	.0707	.0289	.0287
1.	.0635	.0635	.0280	.0280	.0357	.0355								.0635	.0635	.0280	.0280
1.5	.0516	.0516	.0256	.0256	.0260	.0260		.0000266		.0000266	.00000850			.0516	.0516	.0256	.0256
2.	.0441	.0441	.0233	.0233	.0206	.0208		.000108		.000108	.0000527			.0442	.0442	.0235	.0233
3.	.0346	.0346	.0200	.0200	.0146	.0146		.000309	.0000121	.000321	.000212			.0349	.0349	.0203	.0202
4.	.0289	.0289	.0176	.0175	.0114	.0114		.000500	.0000494	.000549	.000412			.0295	.0295	.0182	.0179
5.	.0250	.0250	.0157	.0157	.00930	.00932		.000664	.0000972	.000762	.000613			.0257	.0257	.0164	.0163
6.	.0221	.0221	.0142	.0142	.00787	.00792		.000820	.000149	.000969	.000816			.0230	.0230	.0152	.0150
8.	.0181	.0181	.0121	.0119	.00602	.00611		.00107	.000254	.00132	.00118			.0194	.0194	.0134	.0131
10.	.0154	.0154	.0105	.0105	.00488	.00489		.00128	.000351	.00163	.00149			.0170	.0170	.0121	.0119
15.	.0114	.0114	.00810	.00786	.00331	.00354		.00167	.000546	.00221	.00206			.0136	.0136	.0103	.00992
20.	.00915	.00915	.00665	.00641	.00250	.00274		.00199	.000710	.00269	.00251			.0118	.0118	.00935	.00892
30.	.00665	.00665	.00498	.00471	.00169	.00194		.00241	.000948	.00336	.00312			.0100	.0100	.00834	.00783
40.	.00530	.00530	.00402	.00373	.00127	.00157		.00271	.00113	.00384	.00357			.00914	.00914	.00786	.00736
50.	.00442	.00442	.00340	.00310	.00102	.00133		.00289	.00126	.00415	.00385			.00858	.00858	.00756	.00695
60.	.00381	.00381	.00295	.00263	.000852	.00118		.00307	.00137	.00444	.00412			.00825	.00825	.00739	.00676
80.	.00299	.00299	.00236	.00202	.000641	.000974		.00333	.00154	.00486	.00450			.00784	.00786	.00722	.00652
100.	.00250	.00250	.00197	.00164	.000513	.000862		.00357	.00169	.00525	.00482			.00775	.00775	.00722	.00646

3 LITHIUM
(barns/atom)

E (MeV)	KN $\sigma_{inc,t}$	BD $\sigma_{inc,t}$	KN $\sigma_{inc,a}$	BD $\sigma_{inc,a}$	KN $\sigma_{inc,s}$	BD $\sigma_{inc,s}$	σ_{coh}	$\sigma_{\kappa n}$	$\sigma_{\kappa e}$	$\sigma_{\kappa,t}$	$\sigma_{\kappa,a}$	$\sigma_{\gamma,t}$	$\sigma_{\gamma,a}$	$\sigma_{tot,t}$	$\sigma_{tot,t-coh}$	$\sigma_{tot,a}$	$\sigma_{tot,en}$
.001	1.99	.355	.00387	.000692	1.98	.354	4.73					2100.	2100.	2110.	2100.	2100.	2100.
.0015	1.98	.527	.00579	.00154	1.98	.525	3.99					662.	662.	667.	663.	662.	662.
.002	1.98	.641	.00768	.00249	1.97	.639	3.43					291.	291.	295.	292.	291.	291.
.003	1.97	.808	.0114	.00468	1.96	.803	2.73					86.0	86.0	89.5	86.8	86.0	86.0
.004	1.96	.952	.0151	.00733	1.95	.945	2.28					35.5	35.5	38.7	36.5	35.5	35.5
.005	1.96	1.08	.0187	.0103	1.94	1.07	1.94					18.0	18.0	21.0	19.1	18.0	18.0
.006	1.95	1.20	.0223	.0137	1.93	1.19	1.65					9.85	9.85	12.7	11.0	9.87	9.86
.008	1.94	1.38	.0293	.0209	1.91	1.36	1.21					3.63	3.63	6.22	5.01	3.66	3.65
.01	1.92	1.51	.0360	.0283	1.89	1.48	.903					1.60	1.60	4.01	3.11	1.64	1.63
.015	1.89	1.66	.0522	.0459	1.83	1.61	.487					.361	.361	2.51	2.02	.413	.407
.02	1.85	1.71	.0669	.0617	1.79	1.65	.301					.125	.125	2.14	1.83	.192	.187
.03	1.79	1.72	.0933	.0895	1.70	1.63	.147					.0286	.0286	1.90	1.75	.122	.118
.04	1.74	1.70	.116	.113	1.62	1.59	.0858					.00998	.00998	1.80	1.71	.126	.123
.05	1.68	1.66	.136	.134	1.55	1.53	.0561					.00442	.00442	1.72	1.66	.140	.138
.06	1.64	1.62	.154	.152	1.48	1.47	.0394					.00230	.00230	1.66	1.62	.156	.154
.08	1.55	1.54	.182	.180	1.37	1.36	.0225							1.56	1.54	.182	.180
.1	1.48	1.47	.204	.203	1.27	1.27	.0145							1.48	1.47	.204	.203
.15	1.33	1.33	.241	.241	1.09	1.09	.00652							1.34	1.33	.241	.241
.2	1.22	1.22	.264	.264	.956	.956	.00371							1.22	1.22	.264	.264
.3	1.06	1.06	.286	.286	.775	.774	.00167							1.06	1.06	.286	.286
.4	.950	.949	.294	.294	.656	.655								.949	.949	.294	.294
.5	.867	.867	.296	.297	.571	.570								.867	.867	.296	.297
.6	.802	.802	.295	.295	.508	.507								.802	.802	.295	.295
.8	.705	.705	.288	.287	.417	.418								.705	.705	.288	.287
1.	.634	.633	.279	.277	.355	.356								.633	.633	.279	.277
1.5	.515	.515	.255	.254	.260	.261		.000397		.000397	.000127			.515	.515	.255	.254
2.	.439	.439	.233	.232	.206	.207		.00159		.00159	.000779			.441	.441	.235	.233
3.	.345	.345	.199	.198	.146	.147		.00456	.00012	.00468	.00309			.350	.350	.204	.201
4.	.289	.289	.175	.174	.113	.115		.00742	.000492	.00791	.00593			.297	.297	.183	.180
5.	.249	.249	.157	.156	.0927	.0934		.00986	.00097	.0108	.0087			.260	.260	.168	.165
6.	.220	.220	.142	.141	.0784	.0790		.0122	.00148	.0137	.0115			.234	.234	.156	.152
8.	.180	.180	.120	.119	.0600	.0612		.0159	.00252	.0184	.0163			.198	.198	.138	.135
10.	.153	.153	.105	.104	.0486	.0491		.0190	.00351	.0225	.0205			.175	.175	.127	.124
15.	.114	.114	.0806	.0776	.0329	.0364		.0249	.00545	.0303	.0279			.144	.144	.111	.105
20.	.0912	.0912	.0662	.0629	.0249	.0283		.0292	.00709	.0363	.0334			.127	.127	.102	.0963
30.	.0664	.0664	.0496	.0460	.0168	.0204		.0357	.00945	.0451	.0415			.111	.111	.0947	.0875
40.	.0527	.0527	.0401	.0363	.0127	.0164		.0397	.0112	.0509	.0468			.104	.104	.0910	.0831
50.	.0440	.0440	.0339	.0299	.0101	.0141		.0430	.0125	.0555	.0510			.0995	.0995	.0894	.0809
60.	.0379	.0379	.0294	.0252	.00849	.0127		.0459	.0137	.0596	.0547			.0975	.0975	.0890	.0799
80.	.0299	.0299	.0235	.0193	.00639	.0106		.0490	.0153	.0643	.0588			.0942	.0942	.0878	.0781
100.	.0248	.0248	.0197	.0155	.00512	.00935		.0523	.0168	.0691	.0622			.0939	.0939	.0888	.0777

3 LITHIUM

(cm^2/g = 0.08679 x barns/atom)

E (MeV)	$(\frac{\mu}{\rho})^{KN}_{inc,t}$	$(\frac{\mu}{\rho})^{BD}_{inc,t}$	$(\frac{\mu}{\rho})^{KN}_{inc,a}$	$(\frac{\mu}{\rho})^{BD}_{inc,a}$	$(\frac{\mu}{\rho})^{KN}_{inc,s}$	$(\frac{\mu}{\rho})^{BD}_{inc,s}$	$(\frac{\mu}{\rho})_{coh}$	$(\frac{\mu}{\rho})_{\kappa_n}$	$(\frac{\mu}{\rho})_{\kappa_e}$	$(\frac{\mu}{\rho})_{\kappa,t}$	$(\frac{\mu}{\rho})_{\kappa,a}$	$(\frac{\mu}{\rho})_{r,t}$	$(\frac{\mu}{\rho})_{r,a}$	$(\frac{\mu}{\rho})_{tot,t}$	$(\frac{\mu}{\rho})_{tot,t-coh}$	$(\frac{\mu}{\rho})_{tot,a}$	$(\frac{\mu}{\rho})_{tot,en}$
												182.	182.	183.	182.	182.	182.
.001	.173	.0308	.000336	.0000601	.172	.0307	.411					57.5	57.5	57.9	57.5	57.5	57.5
.0015	.172	.0457	.000503	.000134	.172	.0456	.346					25.3	25.3	25.6	25.3	25.3	25.3
.002	.172	.0556	.000667	.000216	.171	.0555	.298					7.46	7.46	7.77	7.53	7.46	7.46
.003	.171	.0701	.000989	.000406	.170	.0697	.237					3.08	3.08	3.36	3.17	3.08	3.08
.004	.170	.0826	.00131	.000636	.169	.0820	.198					1.56	1.56	1.82	1.66	1.56	1.56
.005	.170	.0937	.00162	.000894	.168	.0929	.168					.855	.855	1.10	.955	.857	.856
.006	.169	.104	.00194	.00119	.168	.103	.143					.315	.315	.540	.435	.318	.317
.008	.168	.120	.00254	.00181	.166	.118	.105					.139	.139	.348	.270	.142	.141
.01	.167	.131	.00312	.00246	.164	.128	.0784					.0313	.0313	.218	.175	.0358	.0353
.015	.164	.144	.00453	.00398	.159	.140	.0423					.0108	.0108	.186	.159	.0167	.0162
.02	.161	.148	.00581	.00535	.155	.143	.0261					.00248	.00248	.165	.152	.0106	.0102
.03	.155	.149	.0081	.00777	.148	.141	.0128					.000866	.000866	.156	.148	.0109	.0107
.04	.151	.148	.0101	.00981	.141	.138	.00745					.000384	.000384	.149	.144	.0122	.0120
.05	.146	.144	.0118	.0116	.135	.133	.00487					.000200	.000200	.144	.141	.0135	.0134
.06	.142	.141	.0134	.0132	.128	.128	.00342							.135	.134	.0158	.0156
.08	.135	.134	.0158	.0156	.119	.118	.00195							.128	.128	.0177	.0176
.1	.128	.128	.0177	.0176	.110	.110	.00126							.116	.115	.0209	.0209
.15	.115	.115	.0209	.0209	.0946	.0946	.000566							.106	.106	.0229	.0229
.2	.106	.106	.0229	.0229	.0830	.0830	.000322							.0920	.0920	.0248	.0248
.3	.0920	.0920	.0248	.0248	.0673	.0672	.000145							.0824	.0824	.0255	.0255
.4	.0825	.0824	.0255	.0255	.0569	.0568								.0752	.0752	.0257	.0258
.5	.0752	.0752	.0257	.0258	.0496	.0495								.0696	.0696	.0256	.0256
.6	.0696	.0696	.0256	.0256	.0441	.0440								.0612	.0612	.0250	.0249
.8	.0612	.0612	.0250	.0249	.0362	.0363								.0549	.0549	.0242	.0240
1.	.0550	.0549	.0242	.0240	.0308	.0309								.0447	.0447	.0221	.0220
1.5	.0447	.0447	.0221	.0220	.0226	.0227		.0000345		.0000345	.0000110			.0383	.0383	.0204	.0202
2.	.0381	.0381	.0202	.0201	.0179	.0180		.000138		.000138	.0000676			.0304	.0304	.0177	.0174
3.	.0299	.0299	.0173	.0172	.0127	.0128		.000396	.0000104	.000406	.000268			.0258	.0258	.0159	.0156
4.	.0251	.0251	.0152	.0151	.00981	.00998		.000644	.0000427	.000687	.000515			.0226	.0226	.0146	.0143
5.	.0216	.0216	.0136	.0135	.00805	.00811		.000856	.0000842	.000937	.000755			.0203	.0203	.0135	.0132
6.	.0191	.0191	.0123	.0122	.00680	.00686		.00106	.000128	.00119	.000998			.0172	.0172	.0120	.0117
8.	.0156	.0156	.0104	.0103	.00521	.00531		.00138	.000219	.00160	.00141			.0152	.0152	.0110	.0108
10.	.0133	.0133	.00911	.00903	.00422	.00426		.00165	.000305	.00195	.00178			.0125	.0125	.00963	.00911
15.	.00989	.00989	.00700	.00673	.00286	.00316		.00216	.000473	.00263	.00242			.0110	.0110	.00885	.00836
20.	.00792	.00792	.00575	.00546	.00216	.00246		.00253	.000615	.00315	.00290			.00963	.00963	.00822	.00759
30.	.00576	.00576	.00430	.00399	.00146	.00177		.00310	.000820	.00391	.00360			.00903	.00903	.00790	.00721
40.	.00457	.00457	.00348	.00315	.00110	.00142		.00345	.000972	.00442	.00406			.00864	.00864	.00776	.00702
50.	.00382	.00382	.00294	.00260	.000877	.00122		.00373	.00108	.00482	.00443			.00846	.00846	.00772	.00693
60.	.00329	.00329	.00255	.00219	.000737	.00110		.00398	.00119	.00517	.00475			.00818	.00818	.00762	.00678
80.	.00260	.00260	.00204	.00168	.000555	.000920		.00425	.00133	.00558	.00510			.00815	.00815	.00771	.00674
100.	.00215	.00215	.00171	.00135	.000444	.000811		.00454	.00146	.00600	.00540						

4 BERYLLIUM
(barns/atom)

E (MeV)	KN $\sigma_{inc,t}$	BD $\sigma_{inc,t}$	KN $\sigma_{inc,a}$	BD $\sigma_{inc,a}$	KN $\sigma_{inc,s}$	BD $\sigma_{inc,s}$	σ_{coh}	$\sigma_{\kappa n}$	$\sigma_{\kappa e}$	$\sigma_{\kappa,t}$	$\sigma_{\kappa,a}$	$\sigma_{\gamma,t}$	$\sigma_{\gamma,a}$	$\sigma_{tot,t}$	$\sigma_{tot,t-coh}$	$\sigma_{tot,a}$	$\sigma_{tot,en}$
.001	2.65	.414	.00516	.000806	2.65	.413	8.75					7490.	7490.	7500.	7490.	7490.	7490.
.0015	2.65	.704	.00772	.00205	2.64	.702	7.41					2290.	2290.	2300.	2290.	2290.	2290.
.002	2.64	.928	.0102	.00360	2.63	.924	6.19					993.	993.	1000.	994.	993.	993.
.003	2.63	1.20	.0152	.00696	2.61	1.19	4.53					298.	298.	304.	299.	298.	298.
.004	2.62	1.36	.0202	.0105	2.60	1.35	3.56					126.	126.	131.	127.	126.	126.
.005	2.61	1.49	.0250	.0143	2.58	1.48	2.95					63.3	63.3	67.7	64.8	63.3	63.3
.006	2.60	1.59	.0298	.0182	2.57	1.57	2.53					35.6	35.6	39.7	37.2	35.6	35.6
.008	2.58	1.78	.0391	.0269	2.54	1.75	1.93					13.3	13.3	17.0	15.1	13.3	13.3
.01	2.56	1.92	.0480	.0360	2.51	1.88	1.50					6.00	6.00	9.42	7.92	6.05	6.04
.015	2.52	2.14	.0696	.0592	2.45	2.08	.866					1.42	1.42	4.43	3.56	1.49	1.48
.02	2.47	2.23	.0892	.0805	2.38	2.15	.551					.515	.515	3.30	2.74	.604	.595
.03	2.39	2.26	.124	.118	2.27	2.14	.276					.123	.123	2.66	2.38	.247	.241
.04	2.31	2.24	.154	.149	2.16	2.09	.165					.0450	.0450	2.45	2.28	.199	.194
.05	2.25	2.20	.181	.177	2.06	2.02	.109					.0206	.0206	2.33	2.22	.202	.198
.06	2.18	2.15	.205	.202	1.98	1.95	.0771					.0108	.0108	2.24	2.16	.216	.213
.08	2.07	2.05	.242	.240	1.83	1.81	.0442					.00395	.00395	2.10	2.05	.246	.244
.1	1.97	1.96	.272	.270	1.70	1.69	.0287					.00184	.00184	1.99	1.96	.274	.272
.15	1.77	1.77	.322	.321	1.45	1.45	.0130							1.78	1.77	.322	.321
.2	1.63	1.62	.351	.350	1.27	1.27	.00737							1.63	1.62	.351	.350
.3	1.41	1.41	.381	.380	1.03	1.03	.00336							1.41	1.41	.381	.380
.4	1.27	1.27	.392	.394	.874	.876	.00190							1.27	1.27	.392	.394
.5	1.16	1.16	.394	.398	.762	.762	.00120							1.16	1.16	.394	.398
.6	1.07	1.07	.393	.394	.677	.676								1.07	1.07	.393	.394
.8	.940	.939	.384	.382	.556	.557								.939	.939	.384	.382
1.	.845	.845	.372	.370	.473	.475								.845	.845	.372	.370
1.5	.686	.686	.340	.338	.347	.348		.00071		.00071	.000226			.687	.687	.341	.338
2.	.585	.585	.311	.309	.275	.276		.00281		.00281	.00138			.588	.588	.314	.310
3.	.460	.460	.266	.264	.195	.196		.00810	.000160	.00826	.00546			.468	.468	.274	.269
4.	.385	.385	.234	.231	.151	.154		.0131	.000658	.0138	.0103			.399	.399	.248	.241
5.	.332	.332	.209	.207	.124	.125		.0175	.00129	.0188	.0151			.351	.351	.228	.222
6.	.294	.294	.189	.188	.105	.106		.0215	.00197	.0235	.0197			.317	.317	.212	.208
8.	.240	.240	.160	.158	.0800	.0818		.0282	.00336	.0316	.0279			.272	.272	.192	.186
10.	.205	.205	.140	.138	.0648	.0668		.0340	.00466	.0387	.0352			.244	.244	.179	.173
15.	.151	.151	.108	.103	.0439	.0483		.0440	.00727	.0513	.0472			.202	.202	.159	.150
20.	.122	.122	.0883	.0832	.0332	.0388		.0520	.00941	.0614	.0565			.183	.183	.150	.140
30.	.0885	.0885	.0661	.0604	.0224	.0281		.0629	.0126	.0755	.0693			.164	.164	.142	.130
40.	.0703	.0703	.0534	.0475	.0169	.0228		.0704	.0149	.0853	.0780			.156	.156	.139	.125
50.	.0587	.0587	.0452	.0389	.0135	.0198		.0760	.0167	.0927	.0844			.151	.151	.138	.123
60.	.0506	.0506	.0392	.0329	.0113	.0177		.0804	.0181	.0985	.0886			.149	.149	.138	.121
80.	.0399	.0399	.0314	.0250	.00852	.0149		.0875	.0204	.108	.0950			.148	.148	.139	.120
100.	.0331	.0331	.0263	.0199	.00683	.0132		.0930	.0223	.115	.0992			.148	.148	.141	.119

4 BERYLLIUM

(cm^2/g = 0.06683 x barns/atom)

E (MeV)	$(\frac{\mu}{\rho})^{KN}_{inc,t}$	$(\frac{\mu}{\rho})^{BD}_{inc,t}$	$(\frac{\mu}{\rho})^{KN}_{inc,a}$	$(\frac{\mu}{\rho})^{BD}_{inc,a}$	$(\frac{\mu}{\rho})^{KN}_{inc,s}$	$(\frac{\mu}{\rho})^{BD}_{inc,s}$	$(\frac{\mu}{\rho})_{coh}$	$(\frac{\mu}{\rho})_{\kappa n}$	$(\frac{\mu}{\rho})_{\kappa e}$	$(\frac{\mu}{\rho})_{\kappa,t}$	$(\frac{\mu}{\rho})_{\kappa,a}$	$(\frac{\mu}{\rho})_{\tau,t}$	$(\frac{\mu}{\rho})_{\tau,a}$	$(\frac{\mu}{\rho})_{tot,t}$	$(\frac{\mu}{\rho})_{tot,t-coh}$	$(\frac{\mu}{\rho})_{tot,a}$	$(\frac{\mu}{\rho})_{tot,en}$
.001	.177	.0277	.000345	.0000539	.177	.0276	.585					501.	501.	501.	501.	501.	501.
.0015	.177	.0470	.000516	.000137	.176	.0469	.495					153.	153.	154.	153.	153.	153.
.002	.176	.0620	.000682	.000241	.176	.0618	.414					66.4	66.4	66.8	66.4	66.4	66.4
.003	.176	.0802	.00102	.000465	.174	.0795	.303					19.9	19.9	20.3	20.0	19.9	19.9
.004	.175	.0909	.00135	.000702	.174	.0902	.238					8.42	8.42	8.75	8.49	8.42	8.42
.005	.174	.0996	.00167	.000956	.172	.0989	.197					4.23	4.23	4.52	4.33	4.23	4.23
.006	.174	.106	.00199	.00122	.172	.105	.169					2.38	2.38	2.65	2.49	2.38	2.38
.008	.172	.119	.00261	.00180	.170	.117	.129					.889	.889	1.14	1.01	.889	.889
.01	.171	.128	.00321	.00241	.168	.126	.100					.401	.401	.630	.529	.406	.406
.015	.168	.143	.00465	.00396	.164	.139	.0579					.0949	.0949	.296	.238	.0996	.0989
.02	.165	.149	.00596	.00538	.159	.144	.0368					.0344	.0344	.221	.183	.0404	.0398
.03	.160	.151	.00829	.00789	.152	.143	.0184					.00822	.00822	.178	.159	.0165	.0161
.04	.154	.150	.0103	.00996	.144	.140	.0110					.00301	.00301	.164	.152	.0133	.0130
.05	.150	.147	.0121	.0118	.138	.135	.00728					.00138	.00138	.156	.148	.0135	.0132
.06	.146	.144	.0137	.0135	.132	.130	.00515					.000722	.000722	.150	.144	.0144	.0142
.08	.138	.137	.0162	.0160	.122	.121	.00295					.000264	.000264	.140	.137	.0164	.0163
.1	.132	.131	.0182	.0180	.114	.113	.00192					.000123	.000123	.133	.131	.0183	.0182
.15	.118	.118	.0215	.0215	.0969	.0969	.000869							.119	.118	.0215	.0215
.2	.109	.108	.0235	.0234	.0849	.0849	.000493							.109	.108	.0235	.0234
.3	.0942	.0942	.0255	.0254	.0688	.0688	.000225							.0942	.0942	.0255	.0254
.4	.0849	.0849	.0262	.0263	.0584	.0585	.000127							.0849	.0849	.0262	.0263
.5	.0775	.0775	.0263	.0266	.0509	.0509	.0000802							.0775	.0775	.0263	.0266
.6	.0715	.0715	.0263	.0263	.0452	.0452								.0715	.0715	.0263	.0263
.8	.0628	.0628	.0257	.0255	.0372	.0372								.0628	.0628	.0257	.0255
1.	.0565	.0565	.0249	.0247	.0316	.0317								.0565	.0565	.0249	.0247
1.5	.0458	.0458	.0227	.0226	.0232	.0233		.0000474		.0000474	.0000151			.0459	.0459	.0228	.0226
2.	.0391	.0391	.0208	.0207	.0184	.0184		.000188		.000188	.0000922			.0393	.0393	.0210	.0207
3.	.0307	.0307	.0178	.0176	.0130	.0131		.000541	.0000107	.000552	.000365			.0313	.0313	.0183	.0180
4.	.0257	.0257	.0156	.0154	.0101	.0103		.000875	.0000440	.000922	.000688			.0267	.0267	.0166	.0161
5.	.0222	.0222	.0140	.0138	.00829	.00835		.00117	.0000862	.00126	.00101			.0235	.0235	.0152	.0148
6.	.0196	.0196	.0126	.0126	.00702	.00708		.00144	.000132	.00157	.00132			.0212	.0212	.0142	.0139
8.	.0160	.0160	.0107	.0106	.00535	.00547		.00188	.000225	.00211	.00186			.0182	.0182	.0128	.0124
10.	.0137	.0137	.00936	.00922	.00433	.00446		.00227	.000311	.00259	.00235			.0163	.0163	.0120	.0116
15.	.0101	.0101	.00722	.00688	.00293	.00323		.00294	.000486	.00343	.00315			.0135	.0135	.0106	.0100
20.	.00815	.00815	.00590	.00556	.00222	.00259		.00348	.000629	.00410	.00378			.0122	.0122	.0100	.00936
30.	.00591	.00591	.00442	.00404	.00150	.00188		.00420	.000842	.00505	.00463			.0110	.0110	.00949	.00869
40.	.00470	.00470	.00357	.00317	.00113	.00152		.00470	.000996	.00570	.00521			.0104	.0104	.00929	.00835
50.	.00392	.00392	.00302	.00260	.000902	.00132		.00508	.00112	.00620	.00564			.0101	.0101	.00922	.00822
60.	.00338	.00338	.00262	.00220	.000755	.00118		.00537	.00121	.00658	.00592			.00996	.00996	.00922	.00809
80.	.00267	.00267	.00210	.00167	.000569	.000996		.00585	.00136	.00722	.00635			.00989	.00989	.00929	.00802
100.	.00221	.00221	.00176	.00133	.000456	.000882		.00622	.00149	.00769	.00663			.00989	.00989	.00942	.00795

5 BORON
(barns/atom)

E (MeV)	$\sigma^{KN}_{inc,t}$	$\sigma^{BD}_{inc,t}$	$\sigma^{KN}_{inc,a}$	$\sigma^{BD}_{inc,a}$	$\sigma^{KN}_{inc,s}$	$\sigma^{BD}_{inc,s}$	σ_{coh}	σ_{xn}	σ_{xe}	$\sigma_{x,t}$	$\sigma_{x,a}$	$\sigma_{\gamma,t}$	$\sigma_{\gamma,a}$	$\sigma_{tot,t}$	$\sigma_{tot,t-coh}$	$\sigma_{tot,a}$	$\sigma_{tot,en}$
.001	3.31	.354	.00645	.00069	3.31	.353	14.3					19200.	19200.	19200.	19200.	19200.	19200.
.0015	3.31	.663	.00964	.00193	3.30	.661	12.4					5940.	5940.	5950.	5940.	5940.	5940.
.002	3.30	.960	.0128	.00372	3.29	.956	10.6					2590.	2590.	2600.	2590.	2590.	2590.
.003	3.29	1.39	.0191	.00806	3.27	1.38	7.74					791.	791.	800.	792.	791.	791.
.004	3.27	1.66	.0252	.0128	3.25	1.65	5.87					336.	336.	344.	338.	336.	336.
.005	3.26	1.84	.0312	.0176	3.23	1.82	4.68					168.	168.	175.	170.	168.	168.
.006	3.25	1.98	.0372	.0227	3.21	1.96	3.89					94.5	94.5	100.	96.5	94.5	94.5
.008	3.23	2.18	.0488	.0330	3.18	2.15	2.89					36.0	36.0	41.1	38.2	36.0	36.0
.01	3.20	2.34	.0600	.0439	3.14	2.30	2.27					16.5	16.5	21.1	18.8	16.6	16.5
.015	3.14	2.59	.0869	.0716	3.06	2.52	1.36					4.10	4.10	8.05	6.69	4.19	4.17
.02	3.09	2.72	.111	.0982	2.98	2.62	.889					1.55	1.55	5.16	4.27	1.66	1.65
.03	2.99	2.79	.155	.145	2.83	2.64	.455					.385	.385	3.63	3.17	.540	.530
.04	2.89	2.77	.193	.185	2.70	2.59	.275					.144	.144	3.19	2.91	.337	.329
.05	2.81	2.73	.226	.220	2.58	2.51	.183					.0675	.0675	2.98	2.80	.293	.287
.06	2.73	2.67	.256	.251	2.47	2.42	.130					.0362	.0362	2.84	2.71	.292	.287
.08	2.59	2.55	.303	.299	2.28	2.25	.0755					.0136	.0136	2.64	2.56	.317	.313
.1	2.46	2.44	.340	.337	2.12	2.10	.0491					.00630	.00630	2.50	2.45	.346	.343
.15	2.22	2.21	.402	.401	1.82	1.81	.0223					.00162	.00162	2.23	2.21	.404	.403
.2	2.03	2.03	.439	.439	1.59	1.59	.0127							2.04	2.03	.439	.439
.3	1.77	1.76	.476	.474	1.29	1.29	.00579							1.77	1.76	.476	.474
.4	1.58	1.58	.490	.490	1.09	1.09	.00332							1.58	1.58	.490	.490
.5	1.45	1.44	.493	.494	.952	.946	.00214							1.44	1.44	.493	.494
.6	1.34	1.34	.491	.493	.846	.847	.00147							1.34	1.34	.491	.493
.8	1.17	1.17	.480	.476	.694	.694								1.17	1.17	.480	.476
1.	1.06	1.06	.464	.464	.591	.596								1.06	1.06	.464	.464
1.5	.858	.858	.424	.422	.433	.436		.00110		.00110	.000351			.859	.859	.425	.422
2.	.731	.732	.388	.386	.343	.346		.00439		.00439	.00215			.736	.736	.392	.388
3.	.575	.575	.332	.329	.243	.246		.0125	.000201	.0127	.00840			.588	.588	.345	.337
4.	.481	.481	.292	.288	.189	.193		.0205	.000824	.0213	.0160			.502	.502	.313	.304
5.	.415	.415	.261	.257	.155	.158		.0273	.00161	.0289	.0232			.444	.444	.290	.280
6.	.367	.367	.236	.234	.131	.133		.0333	.00245	.0357	.0300			.403	.403	.272	.264
8.	.300	.300	.200	.197	.0999	.103		.0440	.00420	.0482	.0424			.348	.348	.248	.239
10.	.256	.256	.175	.172	.0809	.0845		.0529	.00583	.0587	.0532			.315	.315	.234	.225
15.	.189	.189	.134	.128	.0549	.0610		.0683	.00910	.0774	.0712			.266	.266	.211	.199
20.	.152	.152	.110	.103	.0415	.0489		.0807	.0117	.0924	.0850			.244	.244	.202	.188
30.	.111	.111	.0826	.0751	.0279	.0359		.0980	.0157	.114	.104			.225	.225	.197	.179
40.	.0879	.0879	.0668	.0585	.0211	.0294		.110	.0185	.128	.117			.216	.216	.195	.175
50.	.0734	.0734	.0565	.0479	.0169	.0255		.118	.0207	.139	.123			.212	.212	.196	.171
60.	.0632	.0632	.0491	.0403	.0141	.0229		.126	.0226	.149	.130			.212	.212	.198	.170
80.	.0498	.0498	.0392	.0305	.0106	.0193		.136	.0254	.161	.137			.211	.211	.200	.167
100.	.0414	.0414	.0329	.0242	.00853	.0172		.145	.0277	.173	.142			.214	.214	.206	.166

5 BORON

(cm^2/g = 0.05571 x barns/atom)

E (MeV)	$(\frac{\mu}{\rho})^{KN}_{inc,t}$	$(\frac{\mu}{\rho})^{BD}_{inc,t}$	$(\frac{\mu}{\rho})^{KN}_{inc,a}$	$(\frac{\mu}{\rho})^{BD}_{inc,a}$	$(\frac{\mu}{\rho})^{KN}_{inc,s}$	$(\frac{\mu}{\rho})^{BD}_{inc,s}$	$(\frac{\mu}{\rho})_{coh}$	$(\frac{\mu}{\rho})_{\kappa n}$	$(\frac{\mu}{\rho})_{\kappa e}$	$(\frac{\mu}{\rho})_{\kappa,t}$	$(\frac{\mu}{\rho})_{\kappa,a}$	$(\frac{\mu}{\rho})_{\tau,t}$	$(\frac{\mu}{\rho})_{\tau,a}$	$(\frac{\mu}{\rho})_{tot,t}$	$(\frac{\mu}{\rho})_{tot,t-coh}$	$(\frac{\mu}{\rho})_{tot,a}$	$(\frac{\mu}{\rho})_{tot,en}$
.001	.184	.0197	.000359	.0000384	.184	.0197	.797					1070.	1070.	1070.	1070.	1070.	1070.
.0015	.184	.0369	.000537	.000108	.184	.0368	.691					331.	331.	331.	331.	331.	331.
.002	.184	.0535	.000713	.000207	.183	.0533	.591					144.	144.	145.	144.	144.	144.
.003	.183	.0774	.00106	.000449	.182	.0769	.431					44.1	44.1	44.6	44.1	44.1	44.1
.004	.182	.0925	.00140	.000713	.181	.0919	.327					18.7	18.7	19.2	18.8	18.7	18.7
.005	.182	.103	.00174	.000980	.180	.101	.261					9.36	9.36	9.75	9.47	9.36	9.36
.006	.181	.110	.00207	.00126	.179	.109	.217					5.26	5.26	5.67	5.38	5.26	5.26
.008	.180	.121	.00272	.00184	.177	.120	.161					2.01	2.01	2.29	2.13	2.01	2.01
.01	.178	.130	.00334	.00245	.175	.128	.126					.919	.919	1.18	1.05	.925	.919
.015	.175	.144	.00484	.00399	.170	.140	.0758					.228	.228	.448	.373	.233	.232
.02	.172	.152	.00618	.00547	.166	.146	.0495					.0864	.0864	.287	.238	.0925	.0919
.03	.167	.155	.00864	.00808	.158	.147	.0253					.0214	.0214	.202	.177	.0301	.0295
.04	.161	.154	.0108	.0103	.150	.144	.0153					.00802	.00802	.178	.162	.0188	.0183
.05	.157	.152	.0126	.0123	.144	.140	.0102					.00376	.00376	.166	.156	.0163	.0160
.06	.152	.149	.0143	.0140	.138	.135	.00724					.00202	.00202	.158	.151	.0163	.0160
.08	.144	.142	.0169	.0167	.127	.125	.00421					.000758	.000758	.147	.143	.0177	.0174
.1	.137	.136	.0189	.0188	.118	.117	.00274					.000351	.000351	.139	.136	.0193	.0191
.15	.124	.123	.0224	.0223	.101	.101	.00124					.0000903	.0000903	.124	.123	.0225	.0225
.2	.113	.113	.0245	.0245	.0886	.0886	.000708							.114	.113	.0245	.0245
.3	.0986	.0980	.0265	.0264	.0719	.0719	.000323							.0986	.0980	.0265	.0264
.4	.0880	.0880	.0273	.0273	.0607	.0607	.000185							.0880	.0880	.0273	.0273
.5	.0808	.0802	.0275	.0275	.0530	.0527	.000119							.0802	.0802	.0275	.0275
.6	.0747	.0747	.0274	.0275	.0471	.0472	.0000819							.0747	.0747	.0274	.0275
.8	.0652	.0652	.0267	.0265	.0387	.0387								.0652	.0652	.0267	.0265
1.	.0591	.0591	.0258	.0258	.0329	.0332								.0591	.0591	.0258	.0258
1.5	.0478	.0478	.0236	.0235	.0241	.0243		.0000613		.0000613	.0000196			.0479	.0479	.0237	.0235
2.	.0407	.0408	.0216	.0215	.0191	.0193		.000245		.000245	.000120			.0410	.0410	.0218	.0216
3.	.0320	.0320	.0185	.0183	.0135	.0137		.000696	.0000112	.000708	.000468			.0328	.0328	.0192	.0188
4.	.0268	.0268	.0163	.0160	.0105	.0108		.00114	.0000459	.00119	.000891			.0280	.0280	.0174	.0169
5.	.0231	.0231	.0145	.0143	.00864	.0088		.00152	.0000897	.00161	.00129			.0247	.0247	.0162	.0156
6.	.0204	.0204	.0131	.0130	.00730	.00741		.00186	.000136	.00199	.00167			.0225	.0225	.0152	.0147
8.	.0167	.0167	.0111	.0110	.00557	.00574		.00245	.000234	.00269	.00236			.0194	.0194	.0138	.0133
10.	.0143	.0143	.00975	.00958	.00451	.00471		.00295	.000325	.00327	.00296			.0175	.0175	.0130	.0125
15.	.0105	.0105	.00747	.00713	.00306	.00340		.00380	.000507	.00431	.00397			.0148	.0148	.0118	.0111
20.	.00847	.00847	.00613	.00574	.00231	.00272		.00450	.000652	.00515	.00474			.0136	.0136	.0113	.0105
30.	.00618	.00618	.00460	.00418	.00155	.00200		.00546	.000875	.00635	.00579			.0125	.0125	.0110	.00997
40.	.00490	.00490	.00372	.00326	.00118	.00164		.00613	.00103	.00713	.00652			.0120	.0120	.0109	.00975
50.	.00409	.00409	.00315	.00267	.000941	.00142		.00657	.00115	.00774	.00685			.0118	.0118	.0109	.00953
60.	.00352	.00352	.00274	.00225	.000786	.00128		.00702	.00126	.00830	.00724			.0118	.0118	.0110	.00947
80.	.00277	.00277	.00218	.00170	.000591	.00108		.00758	.00142	.00897	.00763			.0118	.0118	.0111	.00930
100.	.00231	.00231	.00183	.00135	.000475	.000958		.00808	.00154	.00964	.00791			.0119	.0119	.0115	.00925

6 CARBON
(barns/atom)

E (MeV)	KN $\sigma_{inc,t}$	BD $\sigma_{inc,t}$	KN $\sigma_{inc,a}$	BD $\sigma_{inc,a}$	KN $\sigma_{inc,s}$	BD $\sigma_{inc,s}$	σ_{coh}	σ_{xn}	σ_{xe}	$\sigma_{x,t}$	$\sigma_{x,a}$	$\sigma_{\gamma,t}$	$\sigma_{\gamma,a}$	$\sigma_{tot,t}$	$\sigma_{tot,t-coh}$	$\sigma_{tot,a}$	$\sigma_{tot,en}$
.001	3.98	.299	.00775	.000582	3.97	.298	21.3					40100.	40100.	40100.	40100.	40100.	40100.
.0015	3.97	.590	.0116	.00172	3.96	.588	19.1					12600.	12600.	12600.	12600.	12600.	12600.
.002	3.96	.900	.0154	.00349	3.94	.897	16.8					5590.	5590.	5610.	5590.	5590.	5590.
.003	3.94	1.43	.0229	.00829	3.92	1.42	12.6					1750.	1750.	1760.	1750.	1750.	1750.
.004	3.93	1.82	.0302	.0140	3.90	1.81	9.54					743.	743.	754.	745.	743.	743.
.005	3.91	2.09	.0375	.0200	3.88	2.07	7.49					377.	377.	387.	379.	377.	377.
.006	3.90	2.29	.0446	.0262	3.86	2.26	6.09					208.	208.	216.	210.	208.	208.
.008	3.87	2.55	.0586	.0386	3.81	2.51	4.36					80.0	80.0	86.9	82.5	86.1	80.0
.01	3.84	2.74	.0720	.0513	3.77	2.69	3.37					38.0	38.0	44.1	40.7	38.1	38.1
.015	3.77	3.03	.104	.0838	3.67	2.95	2.03					9.75	9.75	14.8	12.8	9.85	9.83
.02	3.71	3.19	.134	.115	3.57	3.07	1.34					3.82	3.82	8.35	7.01	3.95	3.93
.03	3.58	3.30	.187	.172	3.40	3.13	.699					.980	.980	4.98	4.28	1.17	1.15
.04	3.47	3.30	.232	.220	3.24	3.08	.425					.370	.370	4.09	3.67	.602	.590
.05	3.37	3.25	.272	.262	3.10	2.99	.285					.177	.177	3.71	3.43	.449	.439
.06	3.27	3.19	.307	.299	2.97	2.89	.204					.0960	.0960	3.49	3.29	.403	.395
.08	3.10	3.05	.363	.357	2.74	2.69	.119					.0357	.0357	3.20	3.09	.399	.393
.1	2.96	2.92	.408	.403	2.55	2.52	.0775					.0172	.0172	3.01	2.94	.425	.420
.15	2.66	2.65	.483	.481	2.18	2.17	.0353					.00466	.00466	2.69	2.65	.488	.486
.2	2.44	2.43	.527	.525	1.91	1.90	.0201					.00183	.00183	2.45	2.43	.529	.527
.3	2.12	2.12	.572	.572	1.55	1.55	.00917							2.13	2.12	.572	.572
.4	1.90	1.90	.589	.589	1.31	1.31	.00530							1.91	1.90	.589	.589
.5	1.73	1.73	.592	.593	1.14	1.14	.00345							1.73	1.73	.592	.593
.6	1.60	1.60	.590	.587	1.02	1.01	.00240							1.60	1.60	.590	.587
.8	1.41	1.41	.576	.574	.833	.836	.00131							1.41	1.41	.576	.574
1.	1.27	1.27	.557	.556	.710	.714								1.27	1.27	.557	.556
1.5	1.03	1.03	.509	.507	.520	.523		.00158		.00158	.000504			1.03	1.03	.511	.508
2.	.878	.878	.466	.464	.412	.414		.0063		.0063	.00309			.884	.884	.472	.467
3.	.691	.690	.398	.394	.292	.296		.0182	.000241	.0184	.0122			.708	.708	.416	.406
4.	.577	.577	.350	.345	.227	.232		.0296	.000986	.0306	.0228			.608	.608	.381	.368
5.	.498	.498	.313	.308	.185	.190		.0395	.00194	.0414	.0332			.539	.539	.354	.341
6.	.441	.441	.284	.279	.157	.162		.0481	.00295	.0510	.0427			.492	.492	.335	.322
8.	.360	.360	.240	.234	.120	.126		.0633	.00506	.0684	.0600			.428	.428	.308	.294
10.	.307	.307	.210	.204	.0971	.103		.0755	.00702	.0825	.0744			.389	.389	.292	.278
15.	.227	.227	.161	.153	.0659	.074		.0986	.0108	.109	.101			.336	.336	.270	.254
20.	.182	.182	.132	.123	.0499	.0593		.116	.0140	.130	.120			.312	.312	.262	.243
30.	.133	.133	.0992	.0891	.0335	.0439		.140	.0187	.159	.144			.292	.292	.258	.233
40.	.105	.105	.0802	.0692	.0253	.0358		.157	.0222	.179	.160			.284	.284	.259	.229
50.	.0881	.0881	.0678	.0566	.0203	.0315		.170	.0248	.195	.169			.283	.283	.263	.226
60.	.0758	.0758	.0589	.0475	.0178	.0283		.179	.0270	.206	.175			.282	.282	.265	.222
80.	.0598	.0598	.0470	.0359	.0128	.0239		.194	.0303	.224	.184			.284	.284	.271	.220
100.	.0497	.0497	.0394	.0284	.0102	.0213		.207	.0331	.240	.190			.290	.290	.279	.218

6 CARBON

(cm^2/g = 0.05014 x barns/atom)

E (MeV)	$(\frac{\mu}{\rho})^{KN}_{inc,t}$	$(\frac{\mu}{\rho})^{BD}_{inc,t}$	$(\frac{\mu}{\rho})^{KN}_{inc,a}$	$(\frac{\mu}{\rho})^{BD}_{inc,a}$	$(\frac{\mu}{\rho})^{KN}_{inc,s}$	$(\frac{\mu}{\rho})^{BD}_{inc,s}$	$(\frac{\mu}{\rho})_{coh}$	$(\frac{\mu}{\rho})_{\kappa,n}$	$(\frac{\mu}{\rho})_{\kappa,e}$	$(\frac{\mu}{\rho})_{\kappa,t}$	$(\frac{\mu}{\rho})_{\kappa,a}$	$(\frac{\mu}{\rho})_{\tau,t}$	$(\frac{\mu}{\rho})_{\tau,a}$	$(\frac{\mu}{\rho})_{tot,t}$	$(\frac{\mu}{\rho})_{tot,t-coh}$	$(\frac{\mu}{\rho})_{tot,a}$	$(\frac{\mu}{\rho})_{tot,en}$
.001	.200	.0150	.000389	.0000292	.199	.0149	1.07					2010.	2010.	2010.	2010.	2010.	2010.
.0015	.199	.0296	.000582	.0000862	.199	.0295	.958					632.	632.	632.	632.	632.	632.
.002	.199	.0451	.000772	.000175	.198	.0450	.842					280.	280.	281.	280.	280.	280.
.003	.198	.0717	.00115	.000416	.197	.0712	.632					87.7	87.7	88.2	87.7	87.7	87.7
.004	.197	.0913	.00151	.000702	.196	.0908	.478					37.3	37.3	37.8	37.4	37.3	37.3
.005	.196	.105	.00188	.00100	.195	.104	.376					18.9	18.9	19.4	19.0	18.9	18.9
.006	.196	.115	.00224	.00131	.194	.113	.305					10.4	10.4	10.8	10.5	10.4	10.4
.008	.194	.128	.00294	.00194	.191	.126	.219					4.01	4.01	4.36	4.14	4.02	4.01
.01	.193	.137	.00361	.00257	.189	.135	.169					1.91	1.91	2.21	2.04	1.91	1.91
.015	.189	.152	.00521	.00420	.184	.148	.102					.489	.489	.742	.642	.494	.493
.02	.186	.160	.00672	.00577	.179	.154	.0672					.192	.192	.419	.351	.198	.197
.03	.180	.165	.00938	.00862	.170	.157	.0350					.0491	.0491	.250	.215	.0587	.0577
.04	.174	.165	.0116	.0110	.162	.154	.0213					.0186	.0186	.205	.184	.0302	.0296
.05	.169	.163	.0136	.0131	.155	.150	.0143					.00887	.00887	.186	.172	.0225	.0220
.06	.164	.160	.0154	.0150	.149	.145	.0102					.00481	.00481	.175	.165	.0202	.0198
.08	.155	.153	.0182	.0179	.137	.135	.00597					.00179	.00179	.160	.155	.0200	.0197
.1	.148	.146	.0205	.0202	.128	.126	.00389					.000862	.000862	.151	.147	.0213	.0211
.15	.133	.133	.0242	.0241	.109	.109	.00177					.000234	.000234	.135	.133	.0245	.0244
.2	.122	.122	.0264	.0263	.0958	.0953	.00101					.0000918	.0000918	.123	.122	.0265	.0264
.3	.106	.106	.0287	.0287	.0777	.0777	.00046							.107	.106	.0287	.0287
.4	.0953	.0953	.0295	.0295	.0657	.0657	.000266							.0958	.0953	.0295	.0295
.5	.0867	.0867	.0297	.0297	.0572	.0572	.000173							.0867	.0867	.0297	.0297
.6	.0802	.0802	.0296	.0294	.0511	.0506	.000120							.0802	.0802	.0296	.0294
.8	.0707	.0707	.0289	.0288	.0418	.0419	.0000657							.0707	.0707	.0289	.0288
1.	.0637	.0637	.0279	.0279	.0356	.0358								.0637	.0637	.0279	.0279
1.5	.0516	.0516	.0255	.0254	.0261	.0262		.0000792		.0000792	.0000253			.0516	.0516	.0256	.0255
2.	.0440	.0440	.0234	.0233	.0207	.0208		.000316		.000316	.000155			.0443	.0443	.0237	.0234
3.	.0346	.0346	.0200	.0198	.0146	.0148		.000913	.0000121	.000923	.000612			.0355	.0355	.0209	.0204
4.	.0289	.0289	.0175	.0173	.0114	.0116		.00148	.0000494	.00153	.00114			.0305	.0305	.0191	.0185
5.	.0250	.0250	.0157	.0154	.00928	.00953		.00198	.0000973	.00208	.00166			.0270	.0270	.0177	.0171
6.	.0221	.0221	.0142	.0140	.00787	.00812		.00241	.000148	.00256	.00214			.0247	.0247	.0168	.0161
8.	.0181	.0181	.0120	.0117	.00602	.00632		.00317	.000254	.00343	.00301			.0215	.0215	.0154	.0147
10.	.0154	.0154	.0105	.0102	.00487	.00516		.00379	.000352	.00414	.00373			.0195	.0195	.0146	.0139
15.	.0114	.0114	.00807	.00767	.00330	.00371		.00494	.000542	.00547	.00506			.0168	.0168	.0135	.0127
20.	.00913	.00913	.00662	.00617	.00250	.00297		.00582	.000702	.00652	.00602			.0156	.0156	.0131	.0122
30.	.00667	.00667	.00497	.00447	.00168	.00220		.00702	.000938	.00797	.00722			.0146	.0146	.0129	.0117
40.	.00526	.00526	.00402	.00347	.00127	.00180		.00787	.00111	.00898	.00802			.0142	.0142	.0130	.0115
50.	.00442	.00442	.00340	.00284	.00102	.00158		.00852	.00124	.00978	.00847			.0142	.0142	.0132	.0113
60.	.00380	.00380	.00295	.00238	.000852	.00142		.00898	.00135	.0103	.00877			.0141	.0141	.0133	.0111
80.	.00300	.00300	.00236	.00180	.000642	.00120		.00973	.00152	.0112	.00923			.0142	.0142	.0136	.0110
100.	.00249	.00249	.00198	.00142	.000511	.00107		.0104	.00166	.0120	.00953			.0145	.0145	.0140	.0109

7 NITROGEN
(barns/atom)

E (MeV)	$\sigma^{KN}_{inc,t}$	$\sigma^{BD}_{inc,t}$	$\sigma^{KN}_{inc,a}$	$\sigma^{BD}_{inc,a}$	$\sigma^{KN}_{inc,s}$	$\sigma^{BD}_{inc,s}$	σ_{coh}	$\sigma_{n,n}$	$\sigma_{n,e}$	$\sigma_{n,t}$	$\sigma_{n,a}$	$\sigma_{\gamma,t}$	$\sigma_{\gamma,a}$	$\sigma_{tot,t}$	$\sigma_{tot,t-coh}$	$\sigma_{tot,a}$	$\sigma_{tot,en}$
.001	4.64	.259	.00904	.000505	4.63	.258	29.8					73000.	73000.	73000.	73000.	73000.	73000.
.0015	4.63	.523	.0135	.00153	4.62	.521	27.3					23000.	23000.	23000.	23000.	23000.	23000.
.002	4.62	.820	.0179	.00318	4.60	.817	24.5					10100.	10100.	10100.	10100.	10100.	10100.
.003	4.60	1.38	.0267	.00800	4.58	1.37	19.0					3180.	3180.	3200.	3180.	3180.	3180.
.004	4.58	1.86	.0353	.0143	4.55	1.85	14.7					1370.	1370.	1390.	1370.	1370.	1370.
.005	4.57	2.21	.0437	.0212	4.52	2.19	11.6					695.	695.	709.	697.	695.	695.
.006	4.55	2.49	.0521	.0285	4.50	2.46	9.34					395.	395.	407.	397.	395.	395.
.008	4.52	2.85	.0683	.0431	4.45	2.81	6.54					160.	160.	169.	163.	160.	160.
.01	4.48	3.09	.0840	.0579	4.40	3.03	4.94					77.8	77.8	85.8	80.9	77.9	77.9
.015	4.40	3.45	.122	.0954	4.28	3.35	2.93					20.4	20.4	26.8	23.8	20.5	20.5
.02	4.33	3.65	.156	.132	4.17	3.52	1.95					8.02	8.02	13.6	11.7	8.18	8.15
.03	4.18	3.80	.218	.198	3.97	3.60	1.03					2.06	2.06	6.89	5.86	2.28	2.26
.04	4.05	3.81	.270	.254	3.78	3.56	.626					.790	.790	5.23	4.60	1.06	1.04
.05	3.93	3.76	.317	.303	3.61	3.46	.421					.377	.377	4.56	4.14	.694	.680
.06	3.82	3.70	.358	.347	3.46	3.35	.302					.204	.204	4.21	3.90	.562	.551
.08	3.62	3.55	.424	.416	3.20	3.13	.177					.0790	.0790	3.81	3.63	.503	.495
.1	3.45	3.40	.476	.469	2.97	2.93	.116					.0373	.0373	3.55	3.44	.513	.506
.15	3.11	3.08	.563	.559	2.54	2.52	.0528					.0100	.0100	3.14	3.09	.573	.569
.2	2.84	2.83	.615	.612	2.23	2.22	.0301					.00397	.00397	2.86	2.83	.619	.616
.3	2.47	2.47	.667	.666	1.81	1.80	.0137					.00106	.00106	2.48	2.47	.668	.667
.4	2.22	2.21	.687	.685	1.53	1.52	.00794							2.22	2.21	.687	.685
.5	2.02	2.02	.690	.693	1.33	1.33	.00521							2.03	2.02	.690	.693
.6	1.87	1.87	.688	.686	1.18	1.18	.00367							1.87	1.87	.688	.686
.8	1.64	1.64	.672	.667	.972	.973	.00204							1.64	1.64	.672	.667
1.	1.48	1.48	.650	.648	.828	.832	.00123							1.48	1.48	.650	.648
1.5	1.20	1.20	.594	.590	.607	.610		.00214		.00214	.000683			1.20	1.20	.596	.591
2.	1.02	1.02	.544	.539	.481	.481		.00858		.00858	.0042			1.03	1.03	.553	.543
3.	.806	.805	.465	.460	.341	.345		.0245	.000281	.0248	.0164			.830	.830	.490	.476
4.	.673	.673	.409	.402	.265	.271		.0402	.00116	.0414	.0308			.714	.714	.450	.433
5.	.582	.582	.365	.359	.216	.223		.0540	.00226	.0563	.0450			.638	.638	.421	.404
6.	.514	.514	.331	.324	.183	.190		.0658	.00343	.0692	.0577			.583	.583	.400	.382
8.	.420	.420	.280	.273	.140	.147		.0860	.00590	.0919	.0804			.512	.512	.372	.353
10.	.358	.358	.245	.237	.113	.121		.102	.00817	.110	.0992			.468	.468	.355	.336
15.	.265	.265	.188	.178	.0769	.0874		.133	.0127	.146	.134			.411	.411	.334	.312
20.	.213	.213	.155	.143	.0582	.0703		.157	.0163	.173	.160			.386	.386	.328	.303
30.	.155	.155	.116	.103	.0391	.0519		.191	.0218	.213	.192			.368	.368	.329	.295
40.	.123	.123	.0935	.0799	.0295	.0430		.213	.0257	.239	.209			.362	.362	.332	.289
50.	.103	.103	.0791	.0655	.0237	.0375		.230	.0289	.259	.220			.362	.362	.338	.285
60.	.0885	.0885	.0687	.0549	.0198	.0336		.243	.0313	.274	.227			.362	.362	.343	.282
80.	.0698	.0698	.0549	.0412	.0149	.0286		.264	.0352	.299	.236			.369	.369	.354	.277
100.	.0580	.0580	.0460	.0325	.0119	.0255		.280	.0383	.318	.242			.376	.376	.364	.274

7 NITROGEN

(cm^2/g = 0.04300 x barns/atom)

E (MeV)	$(\frac{\mu}{\rho})^{KN}_{inc,t}$	$(\frac{\mu}{\rho})^{BD}_{inc,t}$	$(\frac{\mu}{\rho})^{KN}_{inc,a}$	$(\frac{\mu}{\rho})^{BD}_{inc,a}$	$(\frac{\mu}{\rho})^{KN}_{inc,s}$	$(\frac{\mu}{\rho})^{BD}_{inc,s}$	$(\frac{\mu}{\rho})_{coh}$	$(\frac{\mu}{\rho})_{\kappa n}$	$(\frac{\mu}{\rho})_{\kappa e}$	$(\frac{\mu}{\rho})_{\kappa,t}$	$(\frac{\mu}{\rho})_{\kappa,a}$	$(\frac{\mu}{\rho})_{\tau,t}$	$(\frac{\mu}{\rho})_{\tau,a}$	$(\frac{\mu}{\rho})_{tot,t}$	$(\frac{\mu}{\rho})_{tot,t-coh}$	$(\frac{\mu}{\rho})_{tot,a}$	$(\frac{\mu}{\rho})_{tot,en}$
.001	.200	.0111	.000389	.0000217	.199	.0111	1.28					3140.	3140.	3140.	3140.	3140.	3140.
.0015	.199	.0225	.000580	.0000658	.199	.0224	1.17					989.	989.	989.	989.	989.	989.
.002	.199	.0353	.000770	.000137	.198	.0351	1.05					434.	434.	434.	434.	434.	434.
.003	.198	.0593	.00115	.000344	.197	.0589	.817					137.	137.	138.	137.	137.	137.
.004	.197	.0800	.00152	.000615	.196	.0795	.632					58.9	58.9	59.8	58.9	58.9	58.9
.005	.197	.0950	.00188	.000912	.194	.0942	.499					29.9	29.9	30.5	30.0	29.9	29.9
.006	.196	.107	.00224	.00123	.193	.106	.402					17.0	17.0	17.5	17.1	17.0	17.0
.008	.194	.123	.00294	.00185	.191	.121	.281					6.88	6.88	7.27	7.01	6.88	6.88
.01	.193	.133	.00361	.00249	.189	.130	.212					3.35	3.35	3.69	3.48	3.35	3.35
.015	.189	.148	.00525	.00410	.184	.144	.126					.877	.877	1.15	1.02	.881	.881
.02	.186	.157	.00671	.00568	.179	.151	.0838					.345	.345	.585	.503	.352	.350
.03	.180	.163	.00937	.00851	.171	.155	.0443					.0886	.0886	.296	.252	.0980	.0972
.04	.174	.164	.0116	.0109	.163	.153	.0269					.0340	.0340	.225	.198	.0456	.0447
.05	.169	.162	.0136	.0130	.155	.149	.0181					.0162	.0162	.196	.178	.0298	.0292
.06	.164	.159	.0154	.0149	.149	.144	.0130					.00877	.00877	.181	.168	.0242	.0237
.08	.156	.153	.0182	.0179	.138	.135	.00761					.00340	.00340	.164	.156	.0216	.0213
.1	.148	.146	.0205	.0202	.128	.126	.00499					.00160	.00160	.153	.148	.0221	.0218
.15	.134	.132	.0242	.0240	.109	.108	.00227					.000430	.000430	.135	.133	.0246	.0245
.2	.122	.122	.0264	.0263	.0959	.0955	.00129					.000171	.000171	.123	.122	.0266	.0265
.3	.106	.106	.0287	.0286	.0778	.0774	.000589					.0000456	.0000456	.107	.106	.0287	.0287
.4	.0955	.095	.0295	.0295	.0658	.0654	.000341							.0955	.0950	.0295	.0295
.5	.0869	.0869	.0297	.0298	.0572	.0572	.000224							.0873	.0869	.0297	.0298
.6	.0804	.0804	.0296	.0295	.0507	.0507	.000158							.0804	.0804	.0296	.0295
.8	.0705	.0705	.0289	.0287	.0418	.0418	.0000877							.0705	.0705	.0289	.0287
1.	.0636	.0636	.0279	.0279	.0356	.0358	.0000529							.0636	.0636	.0279	.0279
1.5	.0516	.0516	.0255	.0254	.0261	.0262		.000092		.000092	.0000294			.0516	.0516	.0256	.0254
2.	.0439	.0439	.0234	.0232	.0207	.0207		.000369		.000369	.000181			.0443	.0443	.0238	.0233
3.	.0347	.0346	.0200	.0198	.0147	.0148		.00105	.0000121	.00107	.000705			.0357	.0357	.0211	.0205
4.	.0289	.0289	.0176	.0173	.0114	.0117		.00173	.0000499	.00178	.00132			.0307	.0307	.0193	.0186
5.	.0250	.0250	.0157	.0154	.00929	.00959		.00232	.0000972	.00242	.00193			.0274	.0274	.0181	.0174
6.	.0221	.0221	.0142	.0139	.00787	.00817		.00283	.000147	.00298	.00248			.0251	.0251	.0172	.0164
8.	.0181	.0181	.0120	.0117	.00602	.00632		.00370	.000254	.00395	.00346			.0220	.0220	.0160	.0152
10.	.0154	.0154	.0105	.0102	.00486	.00520		.00439	.000351	.00473	.00427			.0201	.0201	.0153	.0144
15.	.0114	.0114	.00808	.00765	.00331	.00376		.00572	.000546	.00628	.00576			.0177	.0177	.0144	.0134
20.	.00916	.00916	.00666	.00615	.00250	.00302		.00675	.000701	.00744	.00688			.0166	.0166	.0141	.0130
30.	.00666	.00666	.00499	.00443	.00168	.00223		.00821	.000937	.00916	.00826			.0158	.0158	.0141	.0127
40.	.00529	.00529	.00402	.00344	.00127	.00185		.00916	.00111	.0103	.00899			.0156	.0156	.0143	.0124
50.	.00443	.00443	.00340	.00282	.00102	.00161		.00989	.00124	.0111	.00946			.0156	.0156	.0145	.0123
60.	.00381	.00381	.00295	.00236	.000851	.00144		.0104	.00135	.0118	.00976			.0158	.0156	.0147	.0121
80.	.00300	.00300	.00236	.00177	.000641	.00123		.0114	.00151	.0129	.0101			.0159	.0159	.0152	.0119
100.	.00249	.00249	.00198	.00140	.000512	.00110		.0120	.00165	.0137	.0104			.0162	.0162	.0157	.0118

8 OXYGEN
(barns/atom)

E (MeV)	KN $\sigma_{inc,t}$	BD $\sigma_{inc,t}$	KN $\sigma_{inc,a}$	BD $\sigma_{inc,a}$	KN $\sigma_{inc,s}$	BD $\sigma_{inc,s}$	σ_{coh}	$\sigma_{\kappa n}$	$\sigma_{\kappa e}$	$\sigma_{\kappa,t}$	$\sigma_{\kappa,a}$	$\sigma_{\gamma,t}$	$\sigma_{\gamma,a}$	$\sigma_{tot,t}$	$\sigma_{tot,t-coh}$	$\sigma_{tot,a}$	$\sigma_{tot,en}$
.001	5.30	.231	.0103	.000450	5.29	.231	39.7					120000.	120000.	120000.	120000.	120000.	120000.
.0015	5.29	.477	.0154	.00139	5.28	.476	37.0					38100.	38100.	38100.	38100.	38100.	38100.
.002	5.28	.765	.0205	.00297	5.26	.762	33.7					16900.	16900.	16900.	16900.	16900.	16900.
.003	5.26	1.35	.0305	.00782	5.23	1.34	27.1					5350.	5350.	5380.	5350.	5350.	5350.
.004	5.24	1.89	.0403	.0145	5.20	1.88	21.5					2300.	2300.	2320.	2300.	2300.	2300.
.005	5.22	2.33	.0500	.0223	5.17	2.31	17.1					1180.	1180.	1200.	1180.	1180.	1180.
.006	5.20	2.67	.0595	.0306	5.14	2.64	13.8					680.	680.	696.	683.	680.	680.
.008	5.16	3.15	.0781	.0477	5.08	3.10	9.61					285.	285.	298.	288.	285.	285.
.01	5.12	3.45	.0960	.0647	5.03	3.39	7.15					141.	141.	152.	144.	141.	141.
.015	5.03	3.87	.139	.107	4.89	3.76	4.13					38.3	38.3	46.3	42.2	38.4	38.4
.02	4.94	4.10	.178	.148	4.77	3.95	2.74					14.9	14.9	21.7	19.0	14.1	15.0
.03	4.78	4.29	.249	.223	4.53	4.07	1.45					3.90	3.90	9.64	8.19	4.15	4.12
.04	4.63	4.31	.309	.287	4.32	4.02	.891					1.49	1.49	6.69	5.80	1.80	1.78
.05	4.49	4.27	.362	.345	4.13	3.93	.600					.710	.710	5.58	4.98	1.07	1.05
.06	4.36	4.20	.410	.394	3.96	3.81	.431					.390	.390	5.02	4.59	.800	.784
.08	4.14	4.04	.485	.473	3.65	3.57	.253					.150	.150	4.44	4.19	.635	.623
.1	3.94	3.88	.544	.535	3.40	3.34	.166					.0717	.0717	4.12	3.95	.616	.607
.15	3.55	3.52	.644	.639	2.90	2.88	.0760					.0194	.0194	3.62	3.54	.663	.658
.2	3.25	3.23	.703	.698	2.55	2.53	.0433					.00765	.00765	3.28	3.24	.711	.706
.3	2.83	2.82	.762	.760	2.07	2.06	.0197					.00209	.00209	2.84	2.82	.764	.762
.4	2.53	2.53	.785	.784	1.75	1.75	.0114							2.54	2.53	.785	.784
.5	2.31	2.31	.789	.792	1.52	1.52	.00750							2.32	2.31	.789	.792
.6	2.14	2.14	.786	.785	1.35	1.35	.00533							2.15	2.14	.786	.785
.8	1.88	1.88	.768	.763	1.11	1.12	.00303							1.88	1.88	.768	.763
1.	1.69	1.69	.743	.740	.946	.950	.00186							1.69	1.69	.743	.740
1.5	1.37	1.37	.679	.674	.694	.696		.00280		.00280	.000893			1.37	1.37	.682	.675
2.	1.17	1.17	.621	.618	.549	.552		.0111		.0111	.00543			1.18	1.18	.632	.623
3.	.921	.921	.531	.525	.389	.396		.0320	.000322	.0323	.0214			.953	.953	.563	.544
4.	.770	.770	.467	.460	.303	.310		.0530	.00132	.0543	.0405			.824	.824	.521	.500
5.	.665	.665	.417	.409	.247	.256		.0701	.00258	.0727	.0581			.738	.738	.490	.467
6.	.587	.587	.378	.369	.209	.218		.0860	.00392	.0899	.0748			.677	.677	.468	.444
8.	.480	.480	.321	.310	.160	.170		.112	.00672	.119	.104			.599	.599	.440	.414
10.	.409	.409	.280	.269	.130	.140		.133	.00934	.142	.127			.551	.551	.422	.396
15.	.303	.303	.215	.202	.0878	.101		.174	.0145	.188	.172			.491	.491	.403	.374
20.	.243	.243	.177	.162	.0665	.0812		.206	.0187	.225	.204			.468	.468	.402	.366
30.	.177	.177	.132	.116	.0447	.0609		.247	.0249	.272	.241			.449	.449	.404	.357
40.	.141	.141	.107	.0907	.0338	.0503		.277	.0295	.306	.263			.447	.447	.413	.354
50.	.117	.117	.0904	.0735	.0270	.0435		.300	.0329	.333	.277			.450	.450	.423	.350
60.	.101	.101	.0785	.0617	.0226	.0393		.316	.0359	.352	.284			.453	.453	.431	.346
80.	.0798	.0798	.0627	.0462	.0170	.0336		.341	.0402	.381	.293			.461	.461	.444	.339
100.	.0662	.0662	.0526	.0363	.0137	.0299		.362	.0436	.406	.299			.472	.472	.459	.335

8 OXYGEN

(cm^2/g = 0.03764 x barns/atom)

E (MeV)	$(\frac{\mu}{\rho})^{KN}_{inc,t}$	$(\frac{\mu}{\rho})^{BD}_{inc,t}$	$(\frac{\mu}{\rho})^{KN}_{inc,a}$	$(\frac{\mu}{\rho})^{BD}_{inc,a}$	$(\frac{\mu}{\rho})^{KN}_{inc,s}$	$(\frac{\mu}{\rho})^{BD}_{inc,s}$	$(\frac{\mu}{\rho})_{coh}$	$(\frac{\mu}{\rho})_{\kappa_n}$	$(\frac{\mu}{\rho})_{\kappa_e}$	$(\frac{\mu}{\rho})_{\kappa,t}$	$(\frac{\mu}{\rho})_{\kappa,a}$	$(\frac{\mu}{\rho})_{\tau,t}$	$(\frac{\mu}{\rho})_{\tau,a}$	$(\frac{\mu}{\rho})_{tot,t}$	$(\frac{\mu}{\rho})_{tot,t-coh}$	$(\frac{\mu}{\rho})_{tot,a}$	$(\frac{\mu}{\rho})_{tot,en}$
.001	.199	.00869	.000388	.0000169	.199	.00869	1.49					4520.	4520.	4520.	4520.	4520.	4520.
.0015	.199	.0180	.000580	.0000523	.199	.0179	1.39					1430.	1430.	1430.	1430.	1430.	1430.
.002	.199	.0288	.000772	.000112	.198	.0287	1.27					636.	636.	636.	636.	636.	636.
.003	.198	.0508	.00115	.000294	.197	.0504	1.02					201.	201.	203.	201.	201.	201.
.004	.197	.0711	.00152	.000546	.196	.0708	.809					86.6	86.6	87.3	86.6	86.6	86.6
.005	.196	.0877	.00188	.000839	.195	.0869	.644					44.4	44.4	45.2	44.4	44.4	44.4
.006	.196	.100	.00224	.00115	.193	.0994	.519					25.6	25.6	26.2	25.7	25.6	25.6
.008	.194	.119	.00294	.00180	.191	.117	.362					10.7	10.7	11.2	10.8	10.7	10.7
.01	.193	.13	.00361	.00244	.189	.128	.269					5.31	5.31	5.72	5.42	5.31	5.31
.015	.189	.146	.00523	.00403	.184	.142	.155					1.44	1.44	1.74	1.59	1.45	1.45
.02	.186	.154	.00670	.00557	.180	.149	.103					.561	.561	.817	.715	.568	.565
.03	.180	.161	.00937	.00839	.171	.153	.0546					.147	.147	.363	.308	.156	.155
.04	.174	.162	.0116	.0108	.163	.151	.0335					.0561	.0561	.252	.218	.0678	.0670
.05	.169	.161	.0136	.0130	.155	.148	.0226					.0267	.0267	.210	.187	.0403	.0395
.06	.164	.158	.0154	.0148	.149	.143	.0162					.0147	.0147	.189	.173	.0301	.0295
.08	.156	.152	.0183	.0178	.137	.134	.00952					.00565	.00565	.167	.158	.0239	.0234
.1	.148	.146	.0205	.0201	.128	.126	.00625					.00270	.00270	.155	.149	.0232	.0228
.15	.134	.132	.0242	.0241	.109	.108	.00286					.000730	.000730	.136	.133	.0250	.0248
.2	.122	.122	.0265	.0263	.0960	.0952	.00163					.000288	.000288	.123	.122	.0268	.0266
.3	.107	.106	.0287	.0286	.0779	.0775	.000742					.0000787	.0000787	.107	.106	.0288	.0287
.4	.0952	.0952	.0295	.0295	.0659	.0659	.000429							.0956	.0952	.0295	.0295
.5	.0869	.0869	.0297	.0298	.0572	.0572	.000282							.0873	.0869	.0297	.0298
.6	.0805	.0805	.0296	.0295	.0508	.0508	.000201							.0809	.0805	.0296	.0295
.8	.0708	.0708	.0289	.0287	.0418	.0422	.000114							.0708	.0708	.0289	.0287
1.	.0636	.0636	.0280	.0279	.0356	.0358	.0000700							.0636	.0636	.0280	.0279
1.5	.0516	.0516	.0256	.0254	.0261	.0262		.000105		.000105	.0000336			.0516	.0516	.0257	.0254
2.	.0440	.0440	.0234	.0233	.0207	.0208		.000418		.000418	.000204			.0444	.0444	.0238	.0234
3.	.0347	.0347	.0200	.0198	.0146	.0149		.00120	.0000121	.00122	.000805			.0359	.0359	.0212	.0206
4.	.0290	.0290	.0176	.0173	.0114	.0117		.00199	.0000497	.00204	.00152			.0310	.0310	.0196	.0188
5.	.0250	.0250	.0157	.0154	.00930	.00964		.00264	.0000971	.00274	.00219			.0278	.0278	.0184	.0176
6.	.0221	.0221	.0142	.0139	.00787	.00821		.00324	.000148	.00338	.00282			.0255	.0255	.0176	.0167
8.	.0181	.0181	.0121	.0117	.00602	.00640		.00422	.000253	.00448	.00391			.0225	.0225	.0166	.0156
10.	.0154	.0154	.0105	.0101	.00489	.00527		.00501	.000352	.00534	.00478			.0207	.0207	.0159	.0149
15.	.0114	.0114	.00809	.00760	.00330	.00380		.00655	.000546	.00708	.00647			.0185	.0185	.0152	.0141
20.	.00915	.00915	.00666	.00610	.00250	.00306		.00775	.000704	.00847	.00768			.0176	.0176	.0151	.0138
30.	.00666	.00666	.00497	.00437	.00168	.00229		.00930	.000937	.0102	.00907			.0169	.0169	.0152	.0134
40.	.00531	.00531	.00403	.00341	.00127	.00189		.0104	.00111	.0115	.00990			.0168	.0168	.0155	.0133
50.	.00440	.00440	.00340	.00277	.00102	.00164		.0113	.00124	.0125	.0104			.0169	.0169	.0159	.0132
60.	.00380	.00380	.00295	.00232	.000851	.00148		.0119	.00135	.0132	.0107			.0171	.0171	.0162	.0130
80.	.00300	.00300	.00236	.00174	.000640	.00126		.0128	.00151	.0143	.0110			.0174	.0174	.0167	.0128
100.	.00249	.00249	.00198	.00137	.000516	.00113		.0136	.00164	.0153	.0113			.0178	.0178	.0173	.0126

9 FLUORINE
(barns/atom)

E (MeV)	$\sigma^{KN}_{inc,t}$	$\sigma^{BD}_{inc,t}$	$\sigma^{KN}_{inc,a}$	$\sigma^{BD}_{inc,a}$	$\sigma^{KN}_{inc,s}$	$\sigma^{BD}_{inc,s}$	σ_{coh}	$\sigma_{\pi n}$	$\sigma_{\pi e}$	$\sigma_{\pi,t}$	$\sigma_{\pi,a}$	$\sigma_{\gamma,t}$	$\sigma_{\gamma,a}$	$\sigma_{tot,t}$	$\sigma_{tot,t-coh}$	$\sigma_{tot,a}$	$\sigma_{tot,en}$
.001	5.96	.207	.0116	.000403	5.95	.207	50.9					189000.	188000.	189000.	189000.	189000.	188000.
.0015	5.95	.434	.0174	.00127	5.93	.433	48.0					59500.	59300.	59500.	59500.	59500.	59300.
.002	5.94	.707	.0230	.00274	5.92	.704	44.5					26300.	26200.	26300.	26300.	26300.	26200.
.003	5.92	1.30	.0343	.00753	5.88	1.29	36.8					8310.	8300.	8350.	8310.	8310.	8300.
.004	5.89	1.86	.0454	.0143	5.85	1.85	29.8					3640.	3640.	3670.	3640.	3640.	3640.
.005	5.87	2.35	.0562	.0225	5.82	2.33	24.1					1900.	1900.	1930.	1900.	1900.	1900.
.006	5.85	2.76	.0670	.0316	5.78	2.73	19.7					1120.	1120.	1140.	1120.	1120.	1120.
.008	5.81	3.35	.0879	.0507	5.72	3.30	13.7					467.	467.	484.	470.	467.	467.
.01	5.76	3.74	.108	.0701	5.66	3.67	10.1					238.	238.	252.	242.	238.	238.
.015	5.66	4.26	.157	.118	5.50	4.14	5.74					66.2	66.2	76.2	70.5	66.4	66.3
.02	5.56	4.53	.201	.163	5.36	4.37	3.78					25.5	25.5	33.8	30.0	25.7	25.7
.03	5.38	4.76	.280	.248	5.10	4.51	2.01					6.72	6.72	13.5	11.5	7.00	6.97
.04	5.21	4.81	.347	.321	4.86	4.49	1.23					2.57	2.57	8.61	7.38	2.92	2.89
.05	5.05	4.77	.408	.385	4.65	4.39	.831					1.24	1.24	6.84	6.01	1.65	1.63
.06	4.91	4.70	.461	.441	4.45	4.26	.598					.687	.687	5.98	5.39	1.15	1.13
.08	4.65	4.53	.545	.530	4.11	4.00	.351					.265	.265	5.15	4.79	.810	.795
.1	4.43	4.35	.612	.600	3.82	3.75	.230					.128	.128	4.71	4.48	.740	.728
.15	3.99	3.95	.724	.717	3.27	3.23	.106					.0348	.0348	4.09	3.98	.759	.752
.2	3.68	3.64	.791	.787	2.87	2.85	.0604					.0138	.0138	3.71	3.65	.805	.801
.3	3.18	3.17	.858	.855	2.32	2.32	.0274					.00377	.00377	3.20	3.17	.862	.859
.4	2.85	2.84	.883	.880	1.97	1.96	.0158					.00150	.00150	2.86	2.84	.884	.881
.5	2.60	2.60	.888	.892	1.71	1.71	.0104							2.61	2.60	.888	.892
.6	2.41	2.40	.885	.881	1.52	1.52	.00744							2.41	2.40	.885	.881
.8	2.11	2.11	.865	.857	1.25	1.25	.00430							2.11	2.11	.845	.857
1.	1.90	1.90	.836	.830	1.06	1.07	.00270							1.90	1.90	.836	.830
1.5	1.54	1.54	.764	.758	.780	.782	.00122	.00355		.00355	.00113			1.54	1.54	.768	.759
2.	1.32	1.32	.699	.696	.618	.624		.0141		.0141	.00689			1.33	1.33	.713	.703
3.	1.04	1.04	.598	.593	.438	.447		.0405	.000362	.0409	.0270			1.08	1.08	.639	.620
4.	.866	.866	.525	.516	.340	.350		.0670	.00149	.0685	.0510			.934	.934	.593	.567
5.	.748	.748	.470	.458	.278	.290		.0890	.00291	.0919	.0733			.840	.840	.562	.531
6.	.661	.661	.426	.414	.235	.247		.108	.00440	.112	.0934			.773	.773	.538	.507
8.	.541	.541	.361	.347	.180	.194		.142	.00759	.150	.130			.691	.691	.511	.477
10.	.460	.460	.315	.301	.146	.159		.170	.0105	.180	.161			.640	.640	.495	.462
15.	.341	.341	.242	.226	.0988	.115		.220	.0163	.236	.215			.577	.577	.478	.441
20.	.274	.274	.199	.181	.0748	.0932		.260	.0210	.281	.253			.555	.555	.480	.434
30.	.199	.199	.149	.129	.0503	.0697		.311	.0281	.339	.296			.538	.538	.488	.425
40.	.158	.158	.120	.100	.0380	.0578		.350	.0333	.383	.323			.541	.541	.503	.423
50.	.132	.132	.102	.0816	.0304	.0504		.379	.0369	.416	.338			.548	.548	.518	.420
60.	.114	.114	.0883	.0684	.0255	.0456		.400	.0403	.440	.347			.554	.554	.528	.415
80.	.0897	.0897	.0706	.0510	.0192	.0387		.430	.0452	.475	.355			.565	.565	.546	.406
100.	.0745	.0745	.0592	.0400	.0154	.0345		.457	.0489	.506	.362			.580	.580	.565	.402

9 FLUORINE

(cm^2/g = 0.03170 x barns/atom)

E (MeV)	$(\frac{\mu}{\rho})^{KN}_{inc,t}$	$(\frac{\mu}{\rho})^{BD}_{inc,t}$	$(\frac{\mu}{\rho})^{KN}_{inc,a}$	$(\frac{\mu}{\rho})^{BD}_{inc,a}$	$(\frac{\mu}{\rho})^{KN}_{inc,s}$	$(\frac{\mu}{\rho})^{BD}_{inc,s}$	$(\frac{\mu}{\rho})_{coh}$	$(\frac{\mu}{\rho})_{\kappa n}$	$(\frac{\mu}{\rho})_{\kappa e}$	$(\frac{\mu}{\rho})_{\kappa,t}$	$(\frac{\mu}{\rho})_{\kappa,a}$	$(\frac{\mu}{\rho})_{\tau,t}$	$(\frac{\mu}{\rho})_{\tau,a}$	$(\frac{\mu}{\rho})_{tot,t}$	$(\frac{\mu}{\rho})_{tot,t-coh}$	$(\frac{\mu}{\rho})_{tot,a}$	$(\frac{\mu}{\rho})_{tot,en}$
.001	.189	.00656	.000368	.0000128	.189	.00656	1.61					5990.	5960.	5990.	5990.	5990.	5960.
.0015	.189	.0138	.000552	.0000403	.188	.0137	1.52					1890.	1880.	1890.	1890.	1890.	1880.
.002	.188	.0224	.000729	.0000869	.188	.0223	1.41					834.	831.	834.	834.	834.	831.
.003	.188	.0412	.00109	.000239	.186	.0409	1.17					263.	263.	265.	263.	263.	263.
.004	.187	.0590	.00144	.000453	.185	.0586	.945					115.	115.	116.	115.	115.	115.
.005	.186	.0745	.00178	.000713	.184	.0739	.764					60.2	60.2	61.2	60.2	60.2	60.2
.006	.185	.0875	.00212	.00100	.183	.0865	.624					35.5	35.5	36.1	35.5	35.5	35.5
.008	.184	.106	.00279	.00161	.181	.105	.434					14.8	14.8	15.3	14.9	14.8	14.8
.01	.183	.119	.00342	.00222	.179	.116	.320					7.54	7.54	7.99	7.67	7.54	7.54
.015	.179	.135	.00498	.00374	.174	.131	.182					2.10	2.10	2.42	2.23	2.10	2.10
.02	.176	.144	.00637	.00517	.170	.139	.120					.808	.808	1.07	.951	.815	.815
.03	.171	.151	.00888	.00786	.162	.143	.0637					.213	.213	.428	.365	.222	.221
.04	.165	.152	.0110	.0102	.154	.142	.0390					.0815	.0815	.273	.234	.0926	.0916
.05	.160	.151	.0129	.0122	.147	.139	.0263					.0393	.0393	.217	.191	.0523	.0517
.06	.156	.149	.0146	.0140	.141	.135	.0190					.0218	.0218	.190	.171	.0365	.0358
.08	.147	.144	.0173	.0168	.130	.127	.0111					.00840	.00840	.163	.152	.0257	.0252
.1	.140	.138	.0194	.0190	.121	.119	.00729					.00406	.00406	.149	.142	.0235	.0231
.15	.126	.125	.0230	.0227	.104	.102	.00336					.00110	.00110	.130	.126	.0241	.0238
.2	.116	.115	.0251	.0249	.0910	.0903	.00191					.000437	.000437	.118	.116	.0255	.0254
.3	.101	.100	.0272	.0271	.0735	.0735	.000869					.000120	.000120	.101	.100	.0273	.0272
.4	.0903	.0900	.0280	.0279	.0624	.0621	.000501					.0000475	.0000475	.0907	.0900	.0280	.0279
.5	.0824	.0824	.0281	.0283	.0542	.0542	.000330							.0827	.0824	.0281	.0283
.6	.0764	.0761	.0281	.0279	.0482	.0482	.000236							.0764	.0761	.0281	.0279
.8	.0669	.0669	.0274	.0272	.0396	.0396	.000136							.0669	.0669	.0274	.0272
1.	.0602	.0602	.0265	.0263	.0336	.0339	.0000856							.0602	.0602	.0269	.0263
1.5	.0488	.0488	.0242	.0240	.0247	.0248	.0000387	.000113		.000113	.0000358			.0488	.0488	.0243	.0241
2.	.0418	.0418	.0222	.0221	.0196	.0198		.000447		.000447	.000218			.0422	.0422	.0226	.0223
3.	.0330	.0330	.0190	.0188	.0139	.0142		.00128	.0000115	.00130	.000856			.0342	.0342	.0203	.0197
4.	.0275	.0275	.0166	.0164	.0108	.0111		.00212	.0000472	.00217	.00162			.0296	.0296	.0188	.0180
5.	.0237	.0237	.0149	.0145	.00881	.00919		.00282	.0000922	.00291	.00232			.0266	.0266	.0178	.0168
6.	.0210	.0210	.0135	.0131	.00745	.00783		.00342	.000139	.00355	.00296			.0245	.0245	.0171	.0161
8.	.0171	.0171	.0114	.0110	.00571	.00615		.00450	.000241	.00476	.00412			.0219	.0219	.0162	.0151
10.	.0146	.0146	.00999	.00954	.00463	.00504		.00539	.000333	.00571	.00510			.0203	.0203	.0157	.0146
15.	.0108	.0108	.00767	.00716	.00313	.00365		.00697	.000517	.00748	.00682			.0183	.0183	.0152	.0140
20.	.00869	.00869	.00631	.00574	.00237	.00295		.00824	.000666	.00891	.00802			.0176	.0176	.0152	.0138
30.	.00631	.00631	.00472	.00409	.00159	.00221		.00986	.000891	.0107	.00938			.0171	.0171	.0155	.0135
40.	.00501	.00501	.00380	.00317	.00120	.00183		.0111	.00106	.0121	.0102			.0171	.0171	.0159	.0134
50.	.00418	.00418	.00323	.00259	.000964	.00160		.0120	.00117	.0132	.0107			.0174	.0174	.0164	.0133
60.	.00361	.00361	.00280	.00217	.000808	.00145		.0127	.00128	.0139	.0110			.0176	.0176	.0167	.0132
80.	.00284	.00284	.00224	.00162	.000609	.00123		.0136	.00143	.0151	.0113			.0179	.0179	.0173	.0129
100.	.00236	.00236	.00188	.00127	.000488	.00109		.0145	.00155	.0160	.0115			.0184	.0184	.0179	.0127

10 NEON
(barns/atom)

E (MeV)	$\sigma^{KN}_{inc,t}$	$\sigma^{BD}_{inc,t}$	$\sigma^{KN}_{inc,a}$	$\sigma^{BD}_{inc,a}$	$\sigma^{KN}_{inc,s}$	$\sigma^{BD}_{inc,s}$	σ_{coh}	$\sigma_{n,n}$	$\sigma_{n,e}$	$\sigma_{n,t}$	$\sigma_{n,a}$	$\sigma_{\gamma,t}$	$\sigma_{\gamma,a}$	$\sigma_{tot,t}$	$\sigma_{tot,t-coh}$	$\sigma_{tot,a}$	$\sigma_{tot,en}$
.001	6.63	.189	.0129	.000368	6.61	.189	63.4					285000.	283000.	285000.	285000.	285000.	283000.
.0015	6.61	.398	.0193	.00116	6.59	.397	60.4					90400.	89900.	90500.	90400.	90400.	89900.
.002	6.60	.654	.0256	.00254	6.57	.651	56.6					39800.	39600.	39900.	39800.	39800.	39600.
.003	6.57	1.23	.0381	.00713	6.54	1.22	48.1					12500.	12500.	12500.	12500.	12500.	12500.
.004	6.55	1.80	.0504	.0139	6.50	1.79	39.8					5500.	5490.	5540.	5500.	5500.	5490.
.005	6.52	2.32	.0625	.0222	6.46	2.30	32.7					2900.	2900.	2940.	2900.	2900.	2900.
.006	6.50	2.78	.0744	.0318	6.43	2.75	27.0					1710.	1710.	1740.	1710.	1710.	1710.
.008	6.45	3.48	.0976	.0527	6.35	3.43	19.0					743.	742.	765.	746.	743.	742.
.01	6.40	3.96	.120	.0742	6.28	3.89	14.0					375.	375.	393.	379.	375.	375.
.015	6.29	4.61	.174	.128	6.12	4.48	7.84					108.	108.	120.	113.	108.	108.
.02	6.18	4.93	.223	.176	5.96	4.75	5.11					42.2	42.2	52.2	47.1	42.4	42.4
.03	5.97	5.22	.311	.272	5.66	4.95	2.71					11.1	11.1	19.0	16.3	11.4	11.4
.04	5.79	5.29	.386	.353	5.40	4.94	1.67					4.30	4.30	11.3	9.59	4.69	4.65
.05	5.61	5.26	.453	.424	5.16	4.84	1.12					2.06	2.06	8.44	7.32	2.51	2.48
.06	5.46	5.20	.512	.488	4.94	4.71	.809					1.13	1.13	7.14	6.33	1.64	1.62
.08	5.17	5.01	.606	.587	4.57	4.42	.475					.443	.443	5.93	5.45	1.05	1.03
.1	4.93	4.82	.680	.665	4.25	4.15	.312					.211	.211	5.34	5.03	.891	.876
.15	4.44	4.39	.805	.797	3.63	3.59	.143					.0580	.0580	4.59	4.45	.863	.855
.2	4.06	4.04	.879	.873	3.19	3.17	.0819					.0232	.0232	4.15	4.06	.902	.896
.3	3.53	3.52	.953	.949	2.58	2.57	.0372					.00645	.00645	3.56	3.53	.959	.955
.4	3.17	3.16	.981	.980	2.19	2.18	.0214					.00259	.00259	3.18	3.16	.984	.983
.5	2.89	2.89	.986	.991	1.90	1.90	.0141					.00135	.00135	2.91	2.89	.987	.992
.6	2.67	2.67	.983	.980	1.69	1.69	.0101							2.68	2.67	.983	.980
.8	2.35	2.35	.961	.954	1.39	1.40	.0059							2.36	2.35	.961	.954
1.	2.11	2.11	.929	.922	1.18	1.19	.00379							2.11	2.11	.929	.922
1.5	1.72	1.71	.849	.840	.867	.870	.00160	.00440		.00440	.00140			1.72	1.71	.853	.841
2.	1.46	1.46	.777	.769	.687	.691		.0175		.0175	.00856			1.48	1.48	.796	.778
3.	1.15	1.15	.664	.654	.486	.496		.0501	.000403	.0505	.0333			1.20	1.20	.715	.687
4.	.962	.962	.584	.571	.378	.391		.0830	.00165	.0846	.0630			1.05	1.05	.669	.634
5.	.831	.831	.522	.508	.309	.323		.110	.00323	.113	.0901			.944	.944	.635	.598
6.	.734	.734	.473	.458	.261	.276		.134	.00490	.139	.115			.873	.873	.612	.573
8.	.601	.601	.401	.385	.200	.216		.175	.00842	.183	.160			.784	.784	.584	.545
10.	.511	.511	.350	.332	.162	.179		.210	.0117	.222	.197			.733	.733	.572	.529
15.	.379	.379	.269	.250	.110	.129		.272	.0182	.290	.261			.669	.669	.559	.511
20.	.304	.304	.221	.199	.0831	.105		.321	.0233	.344	.306			.648	.648	.565	.505
30.	.221	.221	.165	.141	.0559	.0796		.385	.0312	.416	.358			.637	.637	.581	.499
40.	.176	.176	.134	.110	.0422	.0660		.432	.0370	.469	.389			.645	.645	.603	.499
50.	.147	.147	.113	.0889	.0338	.0581		.469	.0410	.510	.408			.657	.657	.623	.497
60.	.126	.126	.0981	.0743	.0283	.0517		.492	.0447	.537	.415			.663	.663	.635	.489
80.	.0997	.0997	.0784	.0557	.0213	.0440		.530	.0502	.580	.424			.680	.680	.658	.480
100.	.0828	.0828	.0657	.0436	.0171	.0392		.565	.0540	.619	.431			.702	.702	.685	.475

10 NEON

(cm^2/g = 0.02984 x barns/atom)

E (MeV)	$(\frac{\mu}{\rho})^{KN}_{inc,t}$	$(\frac{\mu}{\rho})^{BD}_{inc,t}$	$(\frac{\mu}{\rho})^{KN}_{inc,a}$	$(\frac{\mu}{\rho})^{BD}_{inc,a}$	$(\frac{\mu}{\rho})^{KN}_{inc,s}$	$(\frac{\mu}{\rho})^{BD}_{inc,s}$	$(\frac{\mu}{\rho})_{coh}$	$(\frac{\mu}{\rho})_{\kappa n}$	$(\frac{\mu}{\rho})_{\kappa e}$	$(\frac{\mu}{\rho})_{\kappa,t}$	$(\frac{\mu}{\rho})_{\kappa,a}$	$(\frac{\mu}{\rho})_{\tau,t}$	$(\frac{\mu}{\rho})_{\tau,a}$	$(\frac{\mu}{\rho})_{tot,t}$	$(\frac{\mu}{\rho})_{tot,t-coh}$	$(\frac{\mu}{\rho})_{tot,a}$	$(\frac{\mu}{\rho})_{tot,en}$
.001	.198	.00564	.000385	.0000110	.197	.00564	1.89					8500.	8440.	8500.	8500.	8500.	8440.
.0015	.197	.0119	.000576	.0000346	.197	.0118	1.80					2700.	2680.	2700.	2700.	2700.	2680.
.002	.197	.0195	.000764	.0000758	.196	.0194	1.69					1190.	1180.	1190.	1190.	1190.	1180.
.003	.196	.0367	.00114	.000213	.195	.0364	1.44					373.	373.	373.	373.	373.	373.
.004	.195	.0537	.00150	.000415	.194	.0534	1.19					164.	164.	165.	164.	164.	164.
.005	.195	.0692	.00186	.000662	.193	.0686	.976					86.5	86.5	87.7	86.5	86.5	86.5
.006	.194	.083	.00222	.000949	.192	.0821	.806					51.0	51.0	51.9	51.0	51.0	51.0
.008	.192	.104	.00291	.00157	.189	.102	.567					22.2	22.1	22.8	22.3	22.2	22.1
.01	.191	.118	.00358	.00221	.187	.116	.418					11.2	11.2	11.7	11.3	11.2	11.2
.015	.188	.138	.00519	.00382	.183	.134	.234					3.22	3.22	3.58	3.37	3.22	3.22
.02	.184	.147	.00665	.00531	.178	.142	.152					1.26	1.26	1.56	1.41	1.27	1.27
.03	.178	.156	.00928	.00812	.169	.148	.0809					.331	.331	.567	.486	.340	.340
.04	.173	.158	.0115	.0105	.161	.147	.0498					.128	.128	.337	.286	.140	.139
.05	.167	.157	.0135	.0127	.154	.144	.0334					.0615	.0615	.252	.218	.0749	.0740
.06	.163	.155	.0153	.0146	.147	.141	.0241					.0337	.0337	.213	.189	.0489	.0483
.08	.154	.149	.0181	.0175	.136	.132	.0142					.0132	.0132	.177	.163	.0313	.0307
.1	.147	.144	.0203	.0198	.127	.124	.00931					.00630	.00630	.159	.150	.0266	.0261
.15	.132	.131	.0240	.0238	.108	.107	.00427					.00173	.00173	.137	.133	.0258	.0255
.2	.121	.121	.0262	.0261	.0952	.0946	.00244					.000692	.000692	.124	.121	.0269	.0267
.3	.105	.105	.0284	.0283	.0770	.0767	.00111					.000192	.000192	.106	.105	.0286	.0285
.4	.0946	.0943	.0293	.0292	.0653	.0651	.000639					.0000773	.0000773	.0949	.0943	.0294	.0293
.5	.0862	.0862	.0294	.0296	.0567	.0567	.000421					.0000403	.0000403	.0868	.0862	.0295	.0296
.6	.0797	.0797	.0293	.0292	.0504	.0504	.000301							.0800	.0797	.0293	.0292
.8	.0701	.0701	.0287	.0285	.0415	.0418	.000176							.0704	.0701	.0287	.0285
1.	.0630	.0630	.0277	.0275	.0352	.0355	.000113							.0630	.0630	.0277	.0275
1.5	.0513	.0510	.0253	.0251	.0259	.0260	.0000477	.000131		.000131	.0000418			.0513	.0510	.0255	.0251
2.	.0436	.0436	.0232	.0229	.0205	.0206		.000522		.000522	.000255			.0442	.0442	.0237	.0232
3.	.0343	.0343	.0198	.0195	.0145	.0148		.00149	.0000120	.00151	.000994			.0358	.0358	.0213	.0205
4.	.0287	.0287	.0174	.0170	.0113	.0117		.00248	.0000492	.00252	.00188			.0313	.0313	.0200	.0189
5.	.0248	.0248	.0156	.0152	.00922	.00964		.00328	.0000964	.00337	.00269			.0282	.0282	.0189	.0178
6.	.0219	.0219	.0141	.0137	.00779	.00824		.00400	.000146	.00415	.00343			.0261	.0261	.0183	.0171
8.	.0179	.0179	.0120	.0115	.00597	.00645		.00522	.000251	.00546	.00477			.0234	.0234	.0174	.0163
10.	.0152	.0152	.0104	.00991	.00483	.00534		.00627	.000349	.00662	.00588			.0219	.0219	.0171	.0158
15.	.0113	.0113	.00803	.00746	.00328	.00385		.00812	.000543	.00865	.00779			.0200	.0200	.0167	.0152
20.	.00907	.00907	.00659	.00594	.00248	.00313		.00958	.000695	.0103	.00913			.0193	.0193	.0169	.0151
30.	.00659	.00659	.00492	.00421	.00167	.00238		.0115	.000931	.0124	.0107			.0190	.0190	.0173	.0149
40.	.00525	.00525	.00400	.00328	.00126	.00197		.0129	.00110	.0140	.0116			.0192	.0192	.0180	.0149
50.	.00439	.00439	.00337	.00265	.00101	.00173		.0140	.00122	.0152	.0122			.0196	.0196	.0186	.0148
60.	.00376	.00376	.00293	.00222	.000844	.00154		.0147	.00133	.0160	.0124			.0198	.0198	.0189	.0146
80.	.00298	.00298	.00234	.00166	.000636	.00131		.0158	.00150	.0173	.0127			.0203	.0203	.0196	.0143
100.	.00247	.00247	.00196	.00130	.000510	.00117		.0169	.00161	.0185	.0129			.0209	.0209	.0204	.0142

11 SODIUM
(barns/atom)

E (MeV)	KN $\sigma_{inc,t}$	BD $\sigma_{inc,t}$	KN $\sigma_{inc,a}$	BD $\sigma_{inc,a}$	KN $\sigma_{inc,s}$	BD $\sigma_{inc,s}$	σ_{coh}	σ_{x_n}	σ_{x_e}	$\sigma_{x,t}$	$\sigma_{x,a}$	$\sigma_{\gamma,t}$	$\sigma_{\gamma,a}$	$\sigma_{tot,t}$	$\sigma_{tot,t-coh}$	$\sigma_{tot,a}$	$\sigma_{tot,en}$
.001	7.29	.478	.0142	.000931	7.27	.477	73.3					26500.	26500.	26600.	26500.	26500.	26500.
K .001073	7.29	.520	.0152	.00109	7.27	.519	72.5					21900.	21900.	22000.	21900.	21900.	21900.
												334000.	330000.	334000.	334000.	334000.	330000.
.0015	7.27	.758	.0212	.00221	7.25	.756	68.2					130000.	129000.	130000.	130000.	130000.	129000.
.002	7.26	1.01	.0282	.00392	7.23	1.01	63.3					57800.	57400.	57900.	57800.	57800.	57400.
.003	7.23	1.51	.0419	.00875	7.19	1.50	54.5					18200.	18100.	18300.	18200.	18200.	18100.
.004	7.20	2.02	.0554	.0155	7.15	2.00	46.4					8030.	8000.	8080.	8030.	8030.	8000.
.005	7.18	2.51	.0687	.0240	7.11	2.49	39.1					4280.	4270.	4320.	4280.	4280.	4270.
.006	7.15	2.95	.0818	.0338	7.07	2.92	32.9					2550.	2540.	2590.	2550.	2550.	2540.
.008	7.10	3.69	.107	.0559	6.99	3.63	23.7					1120.	1120.	1150.	1120.	1120.	1120.
.01	7.04	4.22	.132	.0791	6.91	4.14	17.7					570.	569.	592.	574.	570.	569.
.015	6.92	4.97	.191	.137	6.73	4.83	9.91					164.	164.	179.	169.	164.	164.
.02	6.80	5.34	.245	.193	6.55	5.15	6.46					65.5	65.5	77.3	70.8	65.7	65.7
.03	6.57	5.67	.342	.295	6.23	5.37	3.44					17.4	17.4	26.5	23.1	17.7	17.7
.04	6.36	5.77	.425	.385	5.94	5.39	2.13					6.80	6.80	14.7	12.6	7.22	7.19
.05	6.18	5.75	.498	.464	5.68	5.29	1.44					3.30	3.30	10.5	9.05	3.80	3.76
.06	6.00	5.69	.563	.534	5.44	5.16	1.04					1.81	1.81	8.54	7.50	2.37	2.34
.08	5.69	5.50	.666	.644	5.02	4.86	.609					.716	.716	6.82	6.22	1.38	1.36
.1	5.42	5.29	.748	.730	4.67	4.56	.400					.343	.343	6.03	5.63	1.09	1.07
.15	4.88	4.82	.885	.875	3.99	3.95	.185					.0945	.0945	5.10	4.91	.980	.970
.2	4.47	4.43	.967	.958	3.50	3.47	.106					.0380	.0380	4.57	4.47	1.00	.996
.3	3.89	3.87	1.05	1.04	2.84	2.83	.0478					.0105	.0105	3.93	3.88	1.06	1.05
.4	3.48	3.47	1.08	1.08	2.40	2.39	.0272					.00430	.00430	3.50	3.47	1.08	1.08
.5	3.18	3.17	1.08	1.09	2.10	2.08	.0178					.00220	.00220	3.19	3.17	1.08	1.09
.6	2.94	2.94	1.08	1.08	1.86	1.86	.0126					.00128	.00128	2.95	2.94	1.08	1.08
.8	2.58	2.58	1.06	1.05	1.53	1.53	.00731							2.59	2.58	1.06	1.05
1.	2.32	2.32	1.02	1.01	1.30	1.31	.00470							2.32	2.32	1.02	1.01
1.5	1.89	1.89	.934	.928	.954	.962	.00202	.00537		.00537	.00171			1.90	1.90	.939	.930
2.	1.61	1.61	.854	.848	.755	.762	.00115	.0214		.0214	.0104			1.63	1.63	.875	.858
3.	1.27	1.27	.730	.723	.535	.547		.0610	.000442	.0614	.0406			1.33	1.33	.791	.764
4.	1.06	1.06	.642	.629	.416	.431		.100	.00182	.102	.0758			1.16	1.16	.744	.705
5.	.914	.914	.574	.558	.340	.356		.133	.00357	.137	.109			1.05	1.05	.711	.667
6.	.808	.808	.520	.503	.288	.305		.163	.00539	.168	.140			.976	.976	.688	.643
8.	.661	.661	.441	.422	.220	.239		.212	.00925	.221	.192			.882	.882	.662	.614
10.	.563	.563	.385	.365	.178	.198		.252	.0128	.265	.234			.828	.828	.650	.599
15.	.416	.416	.296	.272	.121	.144		.331	.0200	.351	.315			.767	.767	.647	.587
20.	.334	.334	.243	.217	.0914	.117		.389	.0256	.415	.366			.749	.749	.658	.583
30.	.243	.243	.182	.153	.0615	.0897		.467	.0342	.501	.427			.744	.744	.683	.580
40.	.193	.193	.147	.118	.0464	.0749		.520	.0406	.561	.458			.754	.754	.708	.576
50.	.161	.161	.124	.095	.0372	.0660		.563	.0451	.608	.479			.769	.769	.732	.574
60.	.139	.139	.108	.0795	.0311	.0595		.595	.0490	.644	.489			.783	.783	.752	.569
80.	.110	.110	.0863	.0590	.0234	.0510		.643	.0550	.698	.499			.808	.808	.784	.558
100.	.0911	.0911	.0723	.0455	.0188	.0455		.683	.0595	.742	.504			.833	.833	.814	.549

(cm^2/g = 0.02620 x barns/atom)

E (MeV)	$(\frac{\mu}{\rho})^{KN}_{inc,t}$	$(\frac{\mu}{\rho})^{BD}_{inc,t}$	$(\frac{\mu}{\rho})^{KN}_{inc,a}$	$(\frac{\mu}{\rho})^{BD}_{inc,a}$	$(\frac{\mu}{\rho})^{KN}_{inc,s}$	$(\frac{\mu}{\rho})^{BD}_{inc,s}$	$(\frac{\mu}{\rho})_{coh}$	$(\frac{\mu}{\rho})_{\kappa n}$	$(\frac{\mu}{\rho})_{\kappa e}$	$(\frac{\mu}{\rho})_{\kappa,t}$	$(\frac{\mu}{\rho})_{\kappa,a}$	$(\frac{\mu}{\rho})_{\tau,t}$	$(\frac{\mu}{\rho})_{\tau,a}$	$(\frac{\mu}{\rho})_{tot,t}$	$(\frac{\mu}{\rho})_{tot,t-coh}$	$(\frac{\mu}{\rho})_{tot,a}$	$(\frac{\mu}{\rho})_{tot,en}$
.001	.191	.0125	.000372	.0000244	.190	.0125	1.92					694.	694.	697.	694.	694.	694.
K .001073	.191	.0136	.000398	.0000286	.190	.0136	1.90					574.	574.	576.	574.	574.	574.
												8750.	8650.	8750.	8750.	8750.	8650.
.0015	.190	.0199	.000555	.0000579	.190	.0198	1.79					3410.	3380.	3410.	3410.	3410.	3380.
.002	.190	.0265	.000739	.000103	.189	.0265	1.66					1510.	1500.	1520.	1510.	1510.	1500.
.003	.189	.0396	.00110	.000229	.188	.0393	1.43					477.	474.	479.	477.	477.	474.
.004	.189	.0529	.00145	.000406	.187	.0524	1.22					210.	210.	212.	210.	210.	210.
.005	.188	.0658	.00180	.000629	.186	.0652	1.02					112.	112.	113.	112.	112.	112.
.006	.187	.0773	.00214	.000886	.185	.0765	.862					66.8	66.5	67.9	66.8	66.8	66.5
.008	.186	.0967	.00280	.00146	.183	.0951	.621					29.3	29.3	30.1	29.3	29.3	29.3
.01	.184	.111	.00346	.00207	.181	.108	.464					14.9	14.9	15.5	15.0	14.9	14.9
.015	.181	.130	.00500	.00359	.176	.127	.260					4.30	4.30	4.69	4.43	4.30	4.30
.02	.178	.140	.00642	.00506	.172	.135	.169					1.72	1.72	2.03	1.85	1.72	1.72
.03	.172	.149	.00896	.00773	.163	.141	.0901					.456	.456	.694	.605	.464	.464
.04	.167	.151	.0111	.0101	.156	.141	.0558					.178	.178	.385	.330	.189	.188
.05	.162	.151	.0130	.0122	.149	.139	.0377					.0865	.0865	.275	.237	.0996	.0985
.06	.157	.149	.0148	.0140	.143	.135	.0272					.0474	.0474	.224	.196	.0621	.0613
.08	.149	.144	.0174	.0169	.132	.127	.0160					.0188	.0188	.179	.163	.0362	.0356
.1	.142	.139	.0196	.0191	.122	.119	.0105					.00899	.00899	.158	.148	.0286	.0280
.15	.128	.126	.0232	.0229	.105	.103	.00485					.00248	.00248	.134	.129	.0257	.0254
.2	.117	.116	.0253	.0251	.0917	.0909	.00278					.000996	.000996	.120	.117	.0262	.0261
.3	.102	.101	.0275	.0272	.0744	.0741	.00125					.000275	.000275	.103	.102	.0278	.0275
.4	.0912	.0909	.0283	.0283	.0629	.0626	.000713					.000113	.000113	.0917	.0909	.0283	.0283
.5	.0833	.0831	.0283	.0286	.0550	.0545	.000466					.0000576	.0000576	.0836	.0831	.0283	.0286
.6	.0770	.0770	.0283	.0283	.0487	.0487	.000330					.0000335	.0000335	.0773	.0770	.0283	.0283
.8	.0676	.0676	.0278	.0275	.0401	.0401	.000192							.0679	.0676	.0278	.0275
1.	.0608	.0608	.0267	.0265	.0341	.0343	.000123							.0608	.0609	.0267	.0265
1.5	.0495	.0495	.0245	.0243	.0250	.0252	.0000529	.000141		.000141	.0000448			.0498	.0498	.0246	.0244
2.	.0422	.0422	.0224	.0222	.0198	.0200	.0000301	.000561		.000561	.000272			.0427	.0427	.0229	.0225
3.	.0333	.0333	.0191	.0189	.0140	.0143		.00160	.0000116	.00161	.00106			.0348	.0348	.0207	.0200
4.	.0278	.0278	.0168	.0165	.0109	.0113		.00262	.0000477	.00267	.00199			.0304	.0304	.0195	.0185
5.	.0239	.0239	.0150	.0146	.00891	.00933		.00348	.0000935	.00359	.00286			.0275	.0275	.0186	.0175
6.	.0212	.0212	.0136	.0132	.00755	.00799		.00427	.000141	.00440	.00367			.0256	.0256	.0180	.0168
8.	.0173	.0173	.0116	.0111	.00576	.00626		.00555	.000242	.00579	.00503			.0231	.0231	.0173	.0161
10.	.0148	.0148	.0101	.00956	.00466	.00519		.00660	.000335	.00694	.00613			.0217	.0217	.0170	.0157
15.	.0109	.0109	.00776	.00713	.00317	.00377		.00867	.000524	.00920	.00825			.0201	.0201	.0170	.0154
20.	.00875	.00875	.00637	.00569	.00239	.00307		.0102	.000671	.0109	.00959			.0196	.0196	.0172	.0153
30.	.00637	.00637	.00477	.00401	.00161	.00235		.0122	.000896	.0131	.0112			.0195	.0195	.0179	.0152
40.	.00506	.00506	.00385	.00309	.00122	.00196		.0136	.00106	.0147	.0120			.0198	.0198	.0185	.0151
50.	.00422	.00422	.00325	.00249	.000975	.00173		.0148	.00118	.0159	.0125			.0201	.0201	.0192	.0150
60.	.00364	.00364	.00283	.00208	.000815	.00156		.0156	.00128	.0169	.0128			.0205	.0205	.0197	.0149
80.	.00288	.00288	.00226	.00155	.000613	.00134		.0168	.00144	.0183	.0131			.0212	.0212	.0205	.0146
100.	.00239	.00239	.00189	.00119	.000493	.00119		.0179	.00156	.0194	.0132			.0218	.0218	.0213	.0144

12 MAGNESIUM
(barns/atom)

E (MeV)	KN $\sigma_{inc,t}$	BD $\sigma_{inc,t}$	KN $\sigma_{inc,a}$	BD $\sigma_{inc,a}$	KN $\sigma_{inc,s}$	BD $\sigma_{inc,s}$	σ_{coh}	$\sigma_{n,n}$	$\sigma_{n,e}$	$\sigma_{n,t}$	$\sigma_{n,a}$	$\sigma_{\gamma,t}$	$\sigma_{\gamma,a}$	$\sigma_{tot,t}$	$\sigma_{tot,t-coh}$	$\sigma_{tot,a}$	$\sigma_{tot,en}$
.001	7.95	.610	.0155	.00119	7.94	.609	86.5					38900.	38900.	39000.	38900.	38900.	38900.
K .001305	7.94	.866	.0202	.00220	7.92	.864	82.2					18500.	18500.	18600.	18500.	18500.	18500.
												268000.	263000.	268000.	268000.	268000.	263000.
.0015	7.94	1.01	.0231	.00295	7.91	1.01	79.5					180000.	177000.	180000.	180000.	180000.	177000.
.002	7.92	1.33	.0307	.00516	7.89	1.32	72.7					80300.	79400.	80400.	80300.	80300.	79400.
.003	7.89	1.84	.0457	.0107	7.84	1.83	61.6					25500.	25300.	25600.	25500.	25500.	25300.
.004	7.86	2.32	.0605	.0179	7.80	2.30	52.7					11300.	11200.	11400.	11300.	11300.	11200.
.005	7.83	2.77	.0750	.0265	7.75	2.74	45.2					6020.	5990.	6070.	6020.	6020.	5990.
.006	7.80	3.19	.0893	.0365	7.71	3.15	38.7					3600.	3590.	3640.	3600.	3600.	3590.
.008	7.74	3.92	.117	.0593	7.62	3.86	28.5					1600.	1600.	1630.	1600.	1600.	1600.
.01	7.68	4.49	.144	.0841	7.54	4.41	21.5					822.	820.	848.	826.	822.	820.
.015	7.55	5.32	.209	.147	7.34	5.17	12.2					238.	238.	256.	243.	238.	238.
.02	7.41	5.75	.267	.208	7.15	5.54	7.93					96.6	96.5	110.	102.	96.9	96.7
.03	7.17	6.12	.373	.318	6.80	5.80	4.23					25.7	25.7	36.0	31.8	26.1	26.0
.04	6.94	6.24	.463	.416	6.48	5.82	2.63					10.1	10.1	19.0	16.3	10.6	10.5
.05	6.74	6.23	.544	.503	6.19	5.73	1.79					4.90	4.90	12.9	11.1	5.44	5.40
.06	6.55	6.17	.614	.579	5.93	5.59	1.29					2.70	2.70	10.2	8.87	3.31	3.28
.08	6.21	5.97	.727	.699	5.48	5.27	.759					1.07	1.07	7.80	7.04	1.80	1.77
.1	5.91	5.75	.816	.793	5.10	4.96	.499					.522	.522	6.77	6.27	1.34	1.31
.15	5.32	5.25	.966	.953	4.36	4.30	.231					.140	.140	5.62	5.39	1.11	1.09
.2	4.88	4.83	1.05	1.04	3.82	3.79	.132					.0580	.0580	5.02	4.89	1.11	1.10
.3	4.24	4.22	1.14	1.14	3.10	3.08	.0600					.0165	.0165	4.30	4.24	1.16	1.16
.4	3.80	3.79	1.18	1.17	2.62	2.62	.0341					.00675	.00675	3.83	3.80	1.19	1.18
.5	3.47	3.46	1.18	1.19	2.29	2.27	.0221					.00345	.00345	3.49	3.46	1.18	1.19
.6	3.21	3.20	1.18	1.17	2.03	2.03	.0155					.00205	.00205	3.22	3.20	1.18	1.17
.8	2.82	2.82	1.15	1.14	1.67	1.68	.00894							2.83	2.82	1.15	1.14
1.	2.53	2.53	1.11	1.11	1.42	1.42	.00575							2.54	2.53	1.11	1.11
1.5	2.06	2.06	1.02	1.01	1.04	1.05	.00252	.0064		.0064	.00204			2.07	2.07	1.03	1.01
2.	1.76	1.76	.932	.928	.824	.832	.00143	.0255		.0255	.0124			1.79	1.79	.957	.940
3.	1.38	1.38	.797	.784	.584	.596		.0726	.000482	.0731	.0482			1.45	1.45	.870	.832
4.	1.15	1.15	.701	.681	.454	.469		.120	.00199	.122	.0906			1.27	1.27	.823	.772
5.	.997	.997	.626	.607	.371	.390		.158	.00389	.162	.128			1.16	1.16	.788	.735
6.	.881	.881	.567	.546	.314	.335		.194	.00588	.200	.166			1.08	1.08	.767	.712
8.	.721	.721	.481	.459	.240	.262		.251	.0101	.261	.226			.982	.982	.742	.685
10.	.614	.614	.420	.398	.194	.216		.300	.0140	.314	.277			.928	.928	.734	.675
15.	.454	.454	.323	.295	.132	.159		.390	.0218	.412	.367			.866	.866	.735	.662
20.	.365	.365	.265	.234	.0997	.131		.460	.0280	.488	.427			.853	.853	.753	.661
30.	.265	.265	.198	.166	.0671	.0994		.552	.0373	.589	.496			.854	.854	.787	.662
40.	.211	.211	.160	.127	.0506	.0842		.619	.0443	.663	.535			.874	.874	.823	.662
50.	.176	.176	.136	.102	.0406	.0741		.670	.0492	.719	.555			.895	.895	.855	.657
60.	.152	.152	.118	.0848	.0339	.0672		.705	.0535	.758	.564			.910	.910	.876	.649
80.	.120	.120	.0941	.0619	.0255	.0581		.761	.0600	.821	.575			.941	.941	.915	.637
100.	.0994	.0994	.0789	.0476	.0205	.0518		.810	.0648	.875	.579			.974	.974	.954	.627

12 MAGNESIUM
(cm²/g = 0.02477 x barns/atom)

E (MeV)	$(\frac{\mu}{\rho})^{KN}_{inc,t}$	$(\frac{\mu}{\rho})^{BD}_{inc,t}$	$(\frac{\mu}{\rho})^{KN}_{inc,a}$	$(\frac{\mu}{\rho})^{BD}_{inc,a}$	$(\frac{\mu}{\rho})^{KN}_{inc,s}$	$(\frac{\mu}{\rho})^{BD}_{inc,s}$	$(\frac{\mu}{\rho})_{coh}$	$(\frac{\mu}{\rho})_{\kappa n}$	$(\frac{\mu}{\rho})_{\kappa e}$	$(\frac{\mu}{\rho})_{\kappa,t}$	$(\frac{\mu}{\rho})_{\kappa,a}$	$(\frac{\mu}{\rho})_{\tau,t}$	$(\frac{\mu}{\rho})_{\tau,a}$	$(\frac{\mu}{\rho})_{tot,t}$	$(\frac{\mu}{\rho})_{tot,t-coh}$	$(\frac{\mu}{\rho})_{tot,a}$	$(\frac{\mu}{\rho})_{tot,en}$
.001	.197	.0151	.000384	.0000295	.197	.0151	2.14					964.	964.	966.	964.	964.	964.
K .001305	.197	.0215	.000500	.0000545	.196	.0214	2.04					458.	458.	461.	458.	458.	458.
												6640.	6510.	6640.	6640.	6640.	6510.
.0015	.197	.0250	.000572	.0000731	.196	.0250	1.97					4460.	4380.	4460.	4460.	4460.	4380.
.002	.196	.0329	.00076	.000128	.195	.0327	1.80					1990.	1970.	1990.	1990.	1990.	1970.
.003	.195	.0456	.00113	.000265	.194	.0453	1.53					632.	627.	634.	632.	632.	627.
.004	.195	.0575	.0015	.000443	.193	.0570	1.31					280.	277.	282.	280.	280.	277.
.005	.194	.0686	.00186	.000656	.192	.0679	1.12					149.	148.	150.	149.	149.	148.
.006	.193	.0790	.00221	.000904	.191	.0780	.959					89.2	88.9	90.2	89.2	89.2	88.9
.008	.192	.0971	.0029	.00147	.189	.0956	.706					39.6	39.6	40.4	39.6	39.6	39.6
.01	.190	.111	.00357	.00208	.187	.109	.533					20.4	20.3	21.0	20.5	20.4	20.3
.015	.187	.132	.00518	.00364	.182	.128	.302					5.90	5.90	6.34	6.02	5.90	5.90
.02	.184	.142	.00661	.00515	.177	.137	.196					2.39	2.39	2.72	2.53	2.40	2.40
.03	.178	.152	.00924	.00788	.168	.144	.105					.637	.637	.892	.788	.646	.644
.04	.172	.155	.0115	.0103	.161	.144	.0651					.250	.250	.471	.404	.263	.260
.05	.167	.154	.0135	.0125	.153	.142	.0443					.121	.121	.320	.275	.135	.134
.06	.162	.153	.0152	.0143	.147	.138	.0320					.0669	.0669	.253	.220	.0820	.0812
.08	.154	.148	.018	.0173	.136	.131	.0188					.0265	.0265	.193	.174	.0446	.0438
.1	.146	.142	.0202	.0196	.126	.123	.0124					.0129	.0129	.168	.155	.0332	.0324
.15	.132	.130	.0239	.0236	.108	.107	.00572					.00347	.00347	.139	.134	.0275	.0270
.2	.121	.120	.026	.0258	.0946	.0939	.00327					.00144	.00144	.124	.121	.0275	.0272
.3	.105	.105	.0282	.0282	.0788	.0763	.00149					.000409	.000409	.107	.105	.0287	.0287
.4	.0941	.0939	.0292	.0290	.0649	.0649	.000845					.000167	.000167	.0949	.0941	.0295	.0292
.5	.0860	.0857	.0292	.0295	.0567	.0562	.000547					.0000855	.0000855	.0864	.0857	.0292	.0295
.6	.0795	.0793	.0292	.0290	.0503	.0503	.000384					.0000508	.0000508	.0798	.0793	.0292	.0290
.8	.0699	.0699	.0285	.0282	.0414	.0416	.000221							.0701	.0699	.0285	.0282
1.	.0627	.0627	.0275	.0275	.0352	.0352	.000142							.0629	.0627	.0275	.0275
1.5	.0510	.0510	.0253	.0250	.0258	.0260	.0000624	.000159		.000159	.0000585			.0513	.0513	.0255	.0250
2.	.0436	.0436	.0231	.0230	.0204	.0206	.0000354	.000632		.000632	.000307			.0443	.0443	.0237	.0233
3.	.0342	.0342	.0197	.0194	.0145	.0148		.00180	.0000119	.00181	.00119			.0359	.0359	.0215	.0206
4.	.0285	.0285	.0174	.0169	.0112	.0116		.00297	.0000493	.00302	.00224			.0315	.0315	.0204	.0191
5.	.0247	.0247	.0155	.0150	.00919	.00966		.00391	.0000964	.00401	.00317			.0287	.0287	.0195	.0182
6.	.0218	.0218	.014	.0135	.00778	.00830		.00481	.000146	.00495	.00411			.0268	.0268	.0190	.0176
8.	.0179	.0179	.0119	.0114	.00594	.00649		.00622	.000250	.00646	.00560			.0243	.0243	.0184	.0170
10.	.0152	.0152	.0104	.00986	.00481	.00535		.00743	.000347	.00778	.00686			.0230	.0230	.0182	.0167
15.	.0112	.0112	.008	.00731	.00327	.00394		.00966	.000540	.0102	.00909			.0215	.0215	.0182	.0164
20.	.00904	.00904	.00656	.00580	.00247	.00324		.0114	.000694	.0121	.0106			.0211	.0211	.0187	.0164
30.	.00656	.00656	.0049	.00411	.00166	.00246		.0137	.000924	.0146	.0123			.0212	.0212	.0195	.0164
40.	.00523	.00523	.00396	.00315	.00125	.00209		.0153	.00110	.0164	.0133			.0216	.0216	.0204	.0164
50.	.00436	.00436	.00337	.00253	.00101	.00184		.0166	.00122	.0178	.0137			.0222	.0222	.0212	.0163
60.	.00377	.00377	.00292	.00210	.00084	.00166		.0175	.00133	.0188	.0140			.0225	.0225	.0217	.0161
80.	.00297	.00297	.00233	.00153	.000632	.00144		.0188	.00149	.0203	.0142			.0233	.0233	.0227	.0158
100.	.00246	.00246	.00195	.00118	.000508	.00128		.0201	.00161	.0217	.0143			.0241	.0241	.0236	.0155

13 ALUMINUM
(barns/atom)

E (MeV)	KN $\sigma_{inc,t}$	BD $\sigma_{inc,t}$	KN $\sigma_{inc,a}$	BD $\sigma_{inc,a}$	KN $\sigma_{inc,s}$	BD $\sigma_{inc,s}$	σ_{coh}	$\sigma_{\gamma n}$	$\sigma_{\gamma e}$	$\sigma_{\gamma,t}$	$\sigma_{\gamma,a}$	$\sigma_{\gamma,t}$	$\sigma_{\gamma,a}$	$\sigma_{tot,t}$	$\sigma_{tot,t-coh}$	$\sigma_{tot,a}$	$\sigma_{tot,en}$
.001	8.61	.641	.0168	.00125	8.60	.640	101.					55200.	55200.	55300.	55200.	55200.	55200.
.0015	8.60	1.11	.0251	.00324	8.57	1.11	92.0					17600.	17600.	17700.	17600.	17600.	17600.
K .001560	8.59	1.16	.0261	.00352	8.57	1.16	90.9					15800.	15800.	15900.	15800.	15800.	15800.
												219000.	213000.	219000.	219000.	219000.	213000.
.002	8.58	1.51	.0333	.00586	8.55	1.50	83.5					108000.	106000.	108000.	108000.	108000.	106000.
.003	8.55	2.13	.0495	.0123	8.50	2.12	69.7					34700.	34200.	34800.	34700.	34700.	34200.
.004	8.51	2.61	.0655	.0201	8.45	2.59	59.3					15400.	15200.	15500.	15400.	15400.	15200.
.005	8.48	3.05	.0812	.0292	8.40	3.02	51.2					8200.	8130.	8250.	8200.	8200.	8130.
.006	8.45	3.46	.0967	.0396	8.35	3.42	44.3					4920.	4890.	4970.	4920.	4920.	4890.
.008	8.39	4.18	.127	.0633	8.26	4.12	33.5					2200.	2190.	2240.	2200.	2200.	2190.
.01	8.33	4.76	.156	.0892	8.17	4.67	25.6					1150.	1150.	1180.	1150.	1150.	1150.
.015	8.18	5.67	.226	.157	7.95	5.51	14.6					337.	336.	357.	343.	337.	336.
.02	8.03	6.15	.290	.222	7.74	5.93	9.54					137.	137.	153.	143.	137.	137.
.03	7.77	6.57	.404	.342	7.36	6.23	5.10					37.	36.9	48.7	43.6	37.4	37.2
.04	7.52	6.70	.502	.447	7.02	6.25	3.19					14.5	14.5	24.4	21.2	15.0	14.9
.05	7.30	6.71	.589	.541	6.71	6.17	2.17					7.05	7.04	15.9	13.8	7.64	7.58
.06	7.09	6.65	.665	.624	6.43	6.03	1.57					3.92	3.92	12.1	10.6	4.58	4.54
.08	6.72	6.45	.787	.755	5.94	5.69	.927					1.56	1.56	8.94	8.01	2.35	2.31
.1	6.41	6.22	.884	.858	5.52	5.36	.610					.763	.763	7.59	6.98	1.65	1.62
.15	5.77	5.68	1.05	1.03	4.72	4.65	.282					.210	.210	6.17	5.89	1.26	1.24
.2	5.28	5.23	1.14	1.13	4.14	4.10	.162					.0865	.0865	5.48	5.32	1.23	1.22
.3	4.59	4.57	1.24	1.23	3.36	3.34	.0736					.0247	.0247	4.67	4.59	1.26	1.25
.4	4.12	4.10	1.28	1.27	2.84	2.83	.0419					.0102	.0102	4.15	4.11	1.29	1.28
.5	3.76	3.75	1.28	1.29	2.48	2.46	.0271					.00510	.00510	3.78	3.76	1.29	1.30
.6	3.48	3.47	1.28	1.27	2.20	2.20	.0188					.00301	.00301	3.49	3.47	1.28	1.27
.8	3.05	3.05	1.25	1.24	1.81	1.81	.0107					.00140	.00140	3.06	3.05	1.25	1.24
1.	2.75	2.74	1.21	1.20	1.54	1.54	.00695							2.75	2.74	1.21	1.20
1.5	2.23	2.23	1.10	1.09	1.13	1.14	.00310	.0075		.0075	.00238			2.24	2.24	1.11	1.09
2.	1.90	1.90	1.01	1.00	.893	.899	.00175	.0300		.0300	.0146			1.93	1.93	1.04	1.01
3.	1.50	1.50	.863	.850	.632	.649		.0852	.000523	.0857	.0566			1.59	1.59	.949	.907
4.	1.25	1.25	.759	.739	.492	.511		.140	.00216	.142	.105			1.39	1.39	.901	.844
5.	1.08	1.08	.678	.656	.402	.424		.187	.00423	.191	.151			1.27	1.27	.849	.807
6.	.954	.954	.615	.598	.340	.364		.227	.00635	.233	.193			1.19	1.19	.848	.783
8.	.781	.781	.521	.494	.260	.287		.295	.0109	.306	.264			1.09	1.09	.827	.758
10.	.665	.665	.454	.426	.210	.239		.352	.0152	.367	.322			1.03	1.03	.821	.748
15.	.492	.492	.349	.317	.143	.175		.460	.0236	.484	.429			.976	.976	.833	.746
20.	.395	.395	.287	.251	.108	.144		.540	.0303	.570	.496			.965	.965	.857	.747
30.	.288	.288	.215	.178	.0727	.110		.650	.0404	.690	.574			.978	.978	.905	.752
40.	.229	.229	.174	.136	.0549	.093		.726	.0481	.774	.617			1.00	1.00	.948	.753
50.	.191	.191	.147	.109	.0439	.0821		.784	.0533	.837	.636			1.03	1.03	.984	.745
60.	.164	.164	.128	.0894	.0368	.0746		.829	.0580	.887	.648			1.05	1.05	1.02	.737
80.	.130	.130	.102	.0653	.0277	.0647		.891	.0650	.956	.658			1.09	1.09	1.06	.723
100.	.108	.108	.0854	.0496	.0222	.0584		.950	.0700	1.02	.663			1.13	1.13	1.11	.713

13 ALUMINUM

(cm^2/g = 0.02232 x barns/atom)

E (MeV)	$(\frac{\mu}{\rho})^{KN}_{inc,t}$	$(\frac{\mu}{\rho})^{BD}_{inc,t}$	$(\frac{\mu}{\rho})^{KN}_{inc,a}$	$(\frac{\mu}{\rho})^{BD}_{inc,a}$	$(\frac{\mu}{\rho})^{KN}_{inc,s}$	$(\frac{\mu}{\rho})^{BD}_{inc,s}$	$(\frac{\mu}{\rho})_{coh}$	$(\frac{\mu}{\rho})_{\kappa_n}$	$(\frac{\mu}{\rho})_{\kappa_e}$	$(\frac{\mu}{\rho})_{\kappa,t}$	$(\frac{\mu}{\rho})_{\kappa,a}$	$(\frac{\mu}{\rho})_{\tau,t}$	$(\frac{\mu}{\rho})_{\tau,a}$	$(\frac{\mu}{\rho})_{tot,t}$	$(\frac{\mu}{\rho})_{tot,t-coh}$	$(\frac{\mu}{\rho})_{tot,a}$	$(\frac{\mu}{\rho})_{tot,en}$
.001	.192	.0143	.000375	.0000279	.192	.0143	2.25					1230.	1230.	1230.	1230.	1230.	1230.
.0015	.192	.0248	.000560	.0000723	.191	.0248	2.05					393.	393.	395.	393.	393.	393.
K .001560	.192	.0259	.000583	.0000786	.191	.0259	2.03					353.	353.	355.	353.	353.	353.
												4890.	4750.	4890.	4890.	4890.	4750.
.002	.192	.0337	.000743	.000131	.191	.0335	1.86					2410.	2370.	2410.	2410.	2410.	2370.
.003	.191	.0475	.00110	.000275	.190	.0473	1.56					775.	763.	777.	775.	775.	763.
.004	.190	.0583	.00146	.000449	.189	.0578	1.32					344.	339.	346.	344.	344.	339.
.005	.189	.0681	.00181	.000652	.187	.0674	1.14					183.	181.	184.	183.	183.	181.
.006	.189	.0772	.00216	.000884	.186	.0763	.989					110.	109.	111.	110.	110.	109.
.008	.187	.0933	.00283	.00141	.184	.092	.748					49.1	48.9	50.0	49.1	49.1	48.9
.01	.186	.106	.00348	.00199	.182	.104	.571					25.7	25.7	26.3	25.7	25.7	25.7
.015	.183	.127	.00504	.00350	.177	.123	.326					7.52	7.50	7.97	7.66	7.52	7.50
.02	.179	.137	.00647	.00496	.173	.132	.213					3.06	3.06	3.41	3.19	3.06	3.06
.03	.173	.147	.00902	.00763	.164	.139	.114					.826	.824	1.09	.973	.835	.830
.04	.168	.150	.0112	.00998	.157	.139	.0712					.324	.324	.545	.473	.335	.333
.05	.163	.150	.0131	.0121	.150	.138	.0484					.157	.157	.355	.308	.171	.169
.06	.158	.148	.0148	.0139	.144	.135	.0350					.0875	.0875	.270	.237	.102	.101
.08	.150	.144	.0176	.0169	.133	.127	.0207					.0348	.0348	.200	.179	.0525	.0516
.1	.143	.139	.0197	.0192	.123	.120	.0136					.0170	.0170	.169	.156	.0368	.0362
.15	.129	.127	.0234	.0230	.105	.104	.00629					.00469	.00469	.138	.131	.0281	.0277
.2	.118	.117	.0254	.0252	.0924	.0915	.00362					.00193	.00193	.122	.119	.0275	.0272
.3	.102	.102	.0277	.0275	.0750	.0745	.00164					.000551	.000551	.104	.102	.0281	.0279
.4	.0920	.0915	.0286	.0283	.0634	.0632	.000935					.000228	.000228	.0926	.0917	.0288	.0286
.5	.0839	.0837	.0286	.0288	.0554	.0549	.000605					.000114	.000114	.0844	.0839	.0288	.0290
.6	.0777	.0775	.0286	.0283	.0491	.0491	.000420					.0000672	.0000672	.0779	.0775	.0286	.0283
.8	.0681	.0681	.0279	.0277	.0404	.0404	.000239					.0000312	.0000312	.0683	.0681	.0279	.0277
1.	.0614	.0612	.0270	.0268	.0344	.0344	.000155							.0614	.0612	.0270	.0268
1.5	.0498	.0498	.0246	.0243	.0252	.0254	.0000692	.000167		.000167	.0000531			.0500	.0500	.0248	.0243
2.	.0424	.0424	.0225	.0223	.0199	.0201	.0000391	.000670		.00067	.000326			.0431	.0431	.0232	.0225
3.	.0335	.0335	.0193	.0190	.0141	.0145		.00190	.0000117	.00191	.00126			.0355	.0355	.0212	.0202
4.	.0279	.0279	.0169	.0165	.0110	.0114		.00312	.0000482	.00317	.00234			.0310	.0310	.0201	.0188
5.	.0241	.0241	.0151	.0146	.00897	.00946		.00417	.0000944	.00426	.00337			.0283	.0283	.0194	.0180
6.	.0213	.0213	.0137	.0132	.00759	.00812		.00507	.000142	.00520	.00431			.0266	.0266	.0189	.0175
8.	.0174	.0174	.0116	.0110	.00580	.00641		.00658	.000243	.00683	.00589			.0243	.0243	.0185	.0169
10.	.0148	.0148	.0101	.00951	.00469	.00533		.00786	.000339	.00819	.00719			.0230	.0230	.0183	.0167
15.	.0110	.0110	.00779	.00708	.00319	.00391		.0103	.000527	.0108	.00958			.0218	.0218	.0186	.0167
20.	.00882	.00882	.00641	.00560	.00241	.00321		.0121	.000676	.0127	.0111			.0215	.0215	.0191	.0167
30.	.00643	.00643	.00480	.00397	.00162	.00246		.0145	.000902	.0154	.0128			.0218	.0218	.0202	.0168
40.	.00511	.00511	.00388	.00304	.00123	.00208		.0162	.00107	.0173	.0138			.0223	.0223	.0212	.0168
50.	.00426	.00426	.00328	.00243	.00098	.00183		.0175	.00119	.0187	.0142			.0230	.0230	.0220	.0166
60.	.00366	.00366	.00286	.00200	.000821	.00167		.0185	.00129	.0198	.0145			.0234	.0234	.0228	.0164
80.	.00290	.00290	.00228	.00146	.000618	.00144		.0199	.00145	.0213	.0147			.0243	.0243	.0237	.0161
100.	.00241	.00241	.00191	.00111	.000496	.00130		.0212	.00156	.0228	.0148			.0252	.0252	.0248	.0159

14 SILICON
(barns/atom)

E (MeV)	KN $\sigma_{inc,t}$	BD $\sigma_{inc,t}$	KN $\sigma_{inc,a}$	BD $\sigma_{inc,a}$	KN $\sigma_{inc,s}$	BD $\sigma_{inc,s}$	σ_{coh}	σ_{x_n}	σ_{x_e}	$\sigma_{x,t}$	$\sigma_{x,a}$	$\sigma_{r,t}$	$\sigma_{r,a}$	$\sigma_{tot,t}$	$\sigma_{tot,t-coh}$	$\sigma_{tot,a}$	$\sigma_{tot,en}$
.001	9.28	.613	.0181	.00119	9.26	.612	118.					76900.	76900.	77000.	76900.	76900.	76900.
.0015	9.26	1.11	.0270	.00324	9.23	1.11	107.					24500.	24500.	24600.	24500.	24500.	24500.
K .001839	9.25	1.43	.0330	.00511	9.21	1.42	100.					13700.	13700.	13800.	13700.	13700.	13700.
												182000.	176000.	182000.	182000.	182000.	176000.
.002	9.24	1.57	.0359	.00609	9.20	1.56	97.0					143000.	138000.	143000.	143000.	143000.	138000.
.003	9.20	2.30	.0534	.0133	9.15	2.29	79.8					46200.	45200.	46300.	46200.	46200.	45200.
.004	9.17	2.85	.0706	.0219	9.10	2.83	67.2					20500.	20200.	20600.	20500.	20500.	20200.
.005	9.13	3.32	.0875	.0318	9.05	3.29	57.8					10900.	10800.	11000.	10900.	10900.	10800.
.006	9.10	3.73	.104	.0427	9.00	3.69	50.3					6530.	6460.	6580.	6530.	6530.	6460.
.008	9.03	4.45	.137	.0674	8.90	4.38	38.6					2920.	2900.	2960.	2920.	2920.	2900.
.01	8.97	5.04	.168	.0944	8.80	4.95	30.0					1550.	1540.	1590.	1560.	1550.	1540.
.015	8.80	6.01	.243	.166	8.56	5.84	17.4					460.	458.	483.	466.	460.	458.
.02	8.65	6.54	.312	.236	8.34	6.30	11.3					188.	187.	206.	195.	188.	187.
.03	8.36	7.01	.435	.365	7.93	6.65	6.06					51.1	51.0	64.2	58.1	51.5	51.4
.04	8.10	7.16	.540	.478	7.56	6.68	3.81					20.4	20.4	31.4	27.6	20.9	20.9
.05	7.86	7.18	.634	.579	7.23	6.60	2.61					9.95	9.94	19.7	17.1	10.6	10.5
.06	7.64	7.12	.717	.668	6.92	6.45	1.89					5.55	5.54	14.6	12.7	6.27	6.21
.08	7.24	6.92	.848	.810	6.39	6.11	1.12					2.21	2.21	10.2	9.13	3.06	3.02
.1	6.90	6.68	.952	.922	5.95	5.76	.734					1.09	1.09	8.50	7.77	2.04	2.01
.15	6.21	6.10	1.13	1.11	5.08	4.99	.340					.299	.299	6.74	6.40	1.43	1.41
.2	5.69	5.63	1.23	1.22	4.46	4.41	.195					.123	.123	5.95	5.75	1.35	1.34
.3	4.95	4.92	1.33	1.33	3.61	3.59	.0889					.0356	.0356	5.04	4.96	1.37	1.37
.4	4.43	4.42	1.37	1.37	3.06	3.05	.0507					.0146	.0146	4.49	4.43	1.38	1.38
.5	4.05	4.04	1.38	1.38	2.67	2.66	.0328					.00743	.00743	4.08	4.05	1.39	1.39
.6	3.74	3.74	1.38	1.37	2.37	2.37	.0226					.00450	.00450	3.77	3.74	1.38	1.37
.8	3.29	3.28	1.34	1.33	1.94	1.95	.0128					.00210	.00210	3.29	3.28	1.34	1.33
1.	2.96	2.95	1.30	1.29	1.66	1.66	.0083					.00122	.00122	2.96	2.95	1.30	1.29
1.5	2.40	2.40	1.19	1.18	1.21	1.22	.00373	.00875		.00875	.00278			2.41	2.41	1.20	1.18
2.	2.05	2.05	1.09	1.08	.961	.972	.00211	.0350		.0350	.0170			2.09	2.08	1.13	1.10
3.	1.61	1.61	.929	.911	.681	.699		.0990	.000563	.0996	.0656			1.71	1.71	1.03	.977
4.	1.35	1.35	.817	.796	.529	.553		.163	.00232	.165	.123			1.52	1.52	.982	.919
5.	1.16	1.16	.730	.702	.433	.458		.216	.00453	.221	.174			1.38	1.38	.951	.876
6.	1.03	1.03	.662	.636	.366	.394		.264	.00688	.271	.223			1.30	1.30	.933	.859
8.	.841	.841	.561	.530	.280	.311		.342	.0118	.354	.305			1.20	1.20	.915	.835
10.	.716	.716	.489	.458	.227	.258		.410	.0164	.426	.373			1.14	1.14	.915	.831
15.	.530	.530	.376	.339	.154	.191		.531	.0254	.556	.490			1.09	1.09	.932	.829
20.	.425	.425	.309	.268	.116	.157		.626	.0327	.659	.567			1.08	1.08	.968	.835
30.	.310	.310	.231	.189	.0783	.121		.752	.0436	.796	.654			1.11	1.11	1.03	.843
40.	.246	.246	.187	.145	.0591	.101		.838	.0518	.890	.698			1.14	1.14	1.08	.843
50.	.206	.206	.158	.116	.0473	.090		.908	.0573	.965	.723			1.17	1.17	1.12	.839
60.	.177	.177	.137	.0954	.0396	.0816		.955	.0623	1.02	.731			1.20	1.20	1.16	.826
80.	.140	.140	.110	.0697	.0298	.0703		1.03	.0698	1.10	.741			1.24	1.24	1.21	.811
100.	.116	.116	.092	.0525	.0239	.0635		1.09	.0751	1.17	.742			1.29	1.29	1.26	.794

14 SILICON

(cm^2/g = 0.02144 x barns/atom)

E (MeV)	$(\frac{\mu}{\rho})^{KN}_{inc,t}$	$(\frac{\mu}{\rho})^{BD}_{inc,t}$	$(\frac{\mu}{\rho})^{KN}_{inc,a}$	$(\frac{\mu}{\rho})^{BD}_{inc,a}$	$(\frac{\mu}{\rho})^{KN}_{inc,s}$	$(\frac{\mu}{\rho})^{BD}_{inc,s}$	$(\frac{\mu}{\rho})_{coh}$	$(\frac{\mu}{\rho})_{\kappa_n}$	$(\frac{\mu}{\rho})_{\kappa_e}$	$(\frac{\mu}{\rho})_{\kappa,t}$	$(\frac{\mu}{\rho})_{\kappa,a}$	$(\frac{\mu}{\rho})_{\tau,t}$	$(\frac{\mu}{\rho})_{\tau,a}$	$(\frac{\mu}{\rho})_{tot,t}$	$(\frac{\mu}{\rho})_{tot,t-coh}$	$(\frac{\mu}{\rho})_{tot,a}$	$(\frac{\mu}{\rho})_{tot,en}$
.001	.199	.0131	.000388	.0000255	.199	.0131	2.53					1650.	1650.	1650.	1650.	1650.	1650.
.0015	.199	.0238	.000579	.0000695	.198	.0238	2.29					525.	525.	527.	525.	525.	525.
K .001839	.198	.0307	.000708	.000110	.197	.0304	2.14					294.	294.	296.	294.	294.	294.
.002	.198	.0337	.000770	.000131	.197	.0334	2.08					3900.	3770.	3900.	3900.	3900.	3770.
.003	.197	.0493	.00114	.000285	.196	.0491	1.71					3070.	2960.	3070.	3070.	3070.	2960.
.004	.197	.0611	.00151	.000470	.195	.0607	1.44					991.	969.	993.	991.	991.	969.
.005	.196	.0712	.00188	.000682	.194	.0705	1.24					440.	433.	442.	440.	440.	433.
.006	.195	.0800	.00223	.000915	.193	.0791	1.08					234.	232.	236.	234.	234.	232.
.008	.194	.0954	.00294	.00145	.191	.0939	.828					140.	139.	141.	140.	140.	139.
.01	.192	.108	.00360	.00202	.189	.106	.643					62.6	62.2	63.5	62.6	62.6	62.2
.015	.189	.129	.00521	.00356	.184	.125	.373					33.2	33.0	34.1	33.4	33.2	33.0
.02	.185	.140	.00669	.00506	.179	.135	.242					9.86	9.82	10.4	9.99	9.86	9.82
.03	.179	.150	.00933	.00783	.170	.143	.130					4.03	4.01	4.42	4.18	4.03	4.01
.04	.174	.154	.0116	.0102	.162	.143	.0817					1.10	1.09	1.38	1.25	1.10	1.10
.05	.169	.154	.0136	.0124	.155	.142	.0560					.437	.437	.673	.592	.448	.448
.06	.164	.153	.0154	.0143	.148	.138	.0405					.213	.213	.422	.367	.227	.225
.08	.155	.148	.0182	.0174	.137	.131	.0240					.119	.119	.313	.272	.134	.133
.1	.148	.143	.0204	.0198	.128	.123	.0157					.0474	.0474	.219	.196	.0656	.0647
.15	.133	.131	.0242	.0238	.109	.107	.00729					.0234	.0234	.182	.167	.0437	.0431
.2	.122	.121	.0264	.0262	.0956	.0946	.00418					.00641	.00641	.145	.137	.0307	.0302
.3	.106	.105	.0285	.0285	.0774	.0770	.00191					.00264	.00264	.128	.123	.0289	.0287
.4	.0950	.0948	.0294	.0294	.0656	.0654	.00109					.000763	.000763	.108	.106	.0294	.0294
.5	.0868	.0866	.0296	.0296	.0572	.0570	.000703					.000313	.000313	.0963	.0950	.0296	.0296
.6	.0802	.0802	.0296	.0294	.0508	.0508	.000485					.000159	.000159	.0875	.0868	.0298	.0298
.8	.0705	.0703	.0287	.0285	.0416	.0418	.000274					.0000965	.0000965	.0808	.0802	.0296	.0294
1.	.0635	.0632	.0279	.0277	.0356	.0356	.000178					.0000450	.0000450	.0705	.0703	.0287	.0285
1.5	.0515	.0515	.0255	.0253	.0259	.0262	.0000800	.000188		.000188	.0000596	.0000262	.0000262	.0635	.0632	.0279	.0277
2.	.0440	.0440	.0234	.0232	.0206	.0208	.0000452	.000750		.000750	.000364			.0517	.0517	.0257	.0253
3.	.0345	.0345	.0199	.0195	.0146	.0150		.00212	.0000121	.00214	.00141			.0448	.0446	.0242	.0236
4.	.0289	.0289	.0175	.0171	.0113	.0119		.00349	.0000497	.00354	.00264			.0367	.0367	.0221	.0209
5.	.0249	.0249	.0157	.0151	.00928	.00982		.00463	.0000971	.00474	.00373			.0326	.0326	.0211	.0197
6.	.0221	.0221	.0142	.0136	.00785	.00845		.00566	.000148	.00581	.00478			.0296	.0296	.0204	.0188
8.	.0180	.0180	.0120	.0114	.00600	.00667		.00733	.000253	.00759	.00654			.0279	.0279	.0200	.0184
10.	.0154	.0154	.0105	.00982	.00487	.00553		.00879	.000352	.00913	.00800			.0257	.0257	.0196	.0179
15.	.0114	.0114	.00806	.00727	.00330	.00410		.0114	.000545	.0119	.0105			.0244	.0244	.0196	.0178
20.	.00911	.00911	.00662	.00575	.00249	.00337		.0134	.000701	.0141	.0122			.0234	.0234	.0200	.0178
30.	.00665	.00665	.00495	.00405	.00168	.00259		.0161	.000935	.0171	.0140			.0232	.0232	.0208	.0179
40.	.00527	.00527	.00401	.00311	.00127	.00217		.0180	.00111	.0191	.0156			.0238	.0238	.0221	.0181
50.	.00442	.00442	.00339	.00249	.00101	.00193		.0195	.00123	.0207	.0155			.0244	.0244	.0232	.0181
60.	.00379	.00379	.00294	.00205	.000849	.00175		.0205	.00134	.0219	.0157			.0251	.0251	.0240	.0180
80.	.00300	.00300	.00236	.00149	.000639	.00151		.0221	.00150	.0236	.0159			.0257	.0257	.0249	.0177
100.	.00249	.00249	.00197	.00113	.000512	.00136		.0234	.00161	.0251	.0159			.0266	.0266	.0259	.0174
														.0277	.0277	.0270	.0170

15 PHOSPHORUS
(barns/atom)

E (MeV)	KN $\sigma_{inc,t}$	BD $\sigma_{inc,t}$	KN $\sigma_{inc,a}$	BD $\sigma_{inc,a}$	KN $\sigma_{inc,s}$	BD $\sigma_{inc,s}$	σ_{coh}	$\sigma_{n,n}$	$\sigma_{n,e}$	$\sigma_{n,t}$	$\sigma_{n,a}$	$\sigma_{r,t}$	$\sigma_{r,a}$	$\sigma_{tot,t}$	$\sigma_{tot,t-coh}$	$\sigma_{tot,a}$	$\sigma_{tot,en}$
.001	9.94	.572	.0194	.00111	9.92	.571	136.					105000.	105000.	105000.	105000.	105000.	105000.
.0015	9.92	1.07	.0289	.00312	9.89	1.07	125.					33300.	33300.	33400.	33300.	33300.	33300.
.002	9.90	1.55	.0384	.00601	9.86	1.54	113.					14700.	14700.	14800.	14700.	14700.	14700.
K .002144	9.89	1.68	.0411	.00698	9.85	1.67	110.					12000.	12000.	12100.	12000.	12000.	12000.
												153000.	146000.	153000.	153000.	153000.	146000.
.003	9.86	2.37	.0572	.0137	9.81	2.36	92.0					60000.	58100.	60100.	60000.	60000.	58100.
.004	9.82	3.02	.0756	.0232	9.75	3.00	76.5					26600.	26000.	26700.	26600.	26600.	26000.
.005	9.79	3.53	.0937	.0338	9.69	3.50	65.3					14300.	14000.	14400.	14300.	14300.	14000.
.006	9.75	3.97	.112	.0455	9.64	3.92	56.7					8600.	8460.	8660.	8600.	8600.	8460.
.008	9.68	4.71	.146	.0713	9.53	4.64	44.0					3860.	3810.	3910.	3860.	3860.	3810.
.01	9.61	5.32	.180	.0997	9.43	5.22	34.6					2060.	2040.	2100.	2070.	2060.	2040.
.015	9.43	6.35	.261	.176	9.17	6.17	20.3					613.	609.	640.	619.	613.	609.
.02	9.27	6.92	.334	.250	8.94	6.67	13.3					252.	251.	272.	259.	252.	251.
.03	8.96	7.44	.466	.387	8.50	7.05	7.13					69.0	68.8	83.6	76.4	69.5	69.2
.04	8.68	7.62	.579	.508	8.10	7.11	4.49					27.6	27.5	39.7	35.2	28.2	28.0
.05	8.42	7.65	.679	.617	7.74	7.03	3.08					13.6	13.6	24.3	21.2	14.3	14.2
.06	8.18	7.60	.768	.713	7.42	6.89	2.24					7.65	7.64	17.5	15.2	8.42	8.35
.08	7.76	7.39	.989	.865	6.85	6.52	1.32					3.06	3.06	11.8	10.4	3.97	3.92
.1	7.39	7.13	1.02	.984	6.37	6.15	.872					1.50	1.50	9.50	8.63	2.52	2.48
.15	6.65	6.53	1.21	1.19	5.45	5.34	.405					.419	.419	7.35	6.95	1.63	1.61
.2	6.10	6.02	1.32	1.30	4.78	4.72	.232					.176	.176	6.43	6.20	1.50	1.48
.3	5.30	5.27	1.43	1.42	3.87	3.85	.106					.0501	.0501	5.43	5.32	1.48	1.47
.4	4.75	4.73	1.47	1.47	3.28	3.26	.0604					.0207	.0207	4.81	4.75	1.49	1.49
.5	4.34	4.32	1.48	1.48	2.86	2.84	.0392					.0103	.0103	4.37	4.33	1.49	1.49
.6	4.01	4.00	1.47	1.47	2.54	2.53	.0269					.00630	.00630	4.03	4.01	1.48	1.48
.8	3.52	3.52	1.44	1.43	2.08	2.09	.0152					.00300	.00300	3.54	3.52	1.44	1.43
1.	3.17	3.16	1.39	1.38	1.77	1.78	.00982					.00176	.00176	3.17	3.16	1.39	1.38
1.5	2.57	2.57	1.27	1.26	1.30	1.31	.00444	.0102		.0102	.00324			2.58	2.58	1.28	1.26
2.	2.19	2.19	1.16	1.15	1.03	1.04	.00252	.0401		.0401	.0195			2.23	2.23	1.20	1.17
3.	1.73	1.73	.996	.977	.730	.753	.00112	.113	.000603	.114	.0748			1.85	1.84	1.11	1.05
4.	1.44	1.44	.876	.850	.567	.590		.187	.00249	.189	.140			1.63	1.63	1.06	.990
5.	1.25	1.25	.783	.754	.464	.496		.250	.00487	.255	.201			1.50	1.50	1.04	.955
6.	1.10	1.10	.709	.675	.392	.425		.304	.00737	.311	.256			1.41	1.41	1.02	.931
8.	.901	.901	.601	.567	.300	.334		.391	.0127	.404	.347			1.30	1.30	1.00	.914
10.	.767	.767	.524	.489	.243	.278		.470	.0176	.488	.425			1.25	1.25	1.01	.914
15.	.568	.568	.403	.361	.165	.207		.610	.0273	.637	.540			1.20	1.20	1.04	.921
20.	.456	.456	.331	.285	.125	.171		.716	.0350	.751	.642			1.21	1.21	1.08	.927
30.	.332	.332	.248	.200	.0838	.132		.859	.0467	.906	.736			1.24	1.24	1.15	.936
40.	.264	.264	.200	.154	.0633	.110		.958	.0555	1.01	.785			1.27	1.27	1.21	.939
50.	.220	.220	.169	.123	.0507	.0975		1.04	.0613	1.10	.814			1.32	1.32	1.27	.937
60.	.190	.190	.147	.101	.0424	.0889		1.10	.0667	1.17	.825			1.36	1.36	1.32	.926
80.	.150	.150	.118	.0738	.0319	.0762		1.18	.0747	1.25	.831			1.40	1.40	1.37	.905
100.	.124	.124	.0986	.0556	.0256	.0684		1.25	.0801	1.33	.829			1.45	1.45	1.43	.885

15 PHOSPHORUS

(cm^2/g = 0.01944 x barns/atom)

E (MeV)	$(\frac{\mu}{\rho})^{KN}_{inc,t}$	$(\frac{\mu}{\rho})^{BD}_{inc,t}$	$(\frac{\mu}{\rho})^{KN}_{inc,a}$	$(\frac{\mu}{\rho})^{BD}_{inc,a}$	$(\frac{\mu}{\rho})^{KN}_{inc,s}$	$(\frac{\mu}{\rho})^{BD}_{inc,s}$	$(\frac{\mu}{\rho})_{coh}$	$(\frac{\mu}{\rho})_{\kappa n}$	$(\frac{\mu}{\rho})_{\kappa e}$	$(\frac{\mu}{\rho})_{\kappa,t}$	$(\frac{\mu}{\rho})_{\kappa,a}$	$(\frac{\mu}{\rho})_{\tau,t}$	$(\frac{\mu}{\rho})_{\tau,a}$	$(\frac{\mu}{\rho})_{tot,t}$	$(\frac{\mu}{\rho})_{tot,t-coh}$	$(\frac{\mu}{\rho})_{tot,a}$	$(\frac{\mu}{\rho})_{tot,en}$
.001	.193	.0111	.000377	.0000216	.193	.0111	2.64					2040.	2040.	2040.	2040.	2040.	2040.
.0015	.193	.0208	.000562	.0000607	.192	.0208	2.43					647.	647.	649.	647.	647.	647.
.002	.192	.0301	.000746	.000117	.192	.0299	2.20					286.	286.	288.	286.	286.	286.
K .002144	.192	.0327	.000799	.000136	.191	.0325	2.14					233.	233.	235.	233.	233.	233.
												2970.	2840.	2970.	2970.	2970.	2840.
.003	.192	.0461	.00111	.000266	.191	.0459	1.79					1170.	1130.	1170.	1170.	1170.	1130.
.004	.191	.0587	.00147	.000451	.190	.0583	1.49					517.	505.	519.	517.	517.	505.
.005	.190	.0686	.00182	.000657	.188	.0680	1.27					278.	272.	280.	278.	278.	272.
.006	.190	.0772	.00218	.000885	.187	.0762	1.10					167.	164.	168.	167.	167.	164.
.008	.188	.0916	.00284	.00139	.185	.0902	.855					75.0	74.1	76.0	75.0	75.0	74.1
.01	.187	.103	.00350	.00194	.183	.101	.673					40.0	39.7	40.8	40.2	40.0	39.7
.015	.183	.123	.00587	.00342	.178	.120	.395					11.9	11.8	12.4	12.0	11.9	11.8
.02	.180	.135	.00649	.00486	.174	.130	.259					4.90	4.88	5.29	5.03	4.90	4.88
.03	.174	.145	.00906	.00752	.165	.137	.139					1.34	1.34	1.63	1.49	1.35	1.35
.04	.169	.148	.0113	.00988	.157	.138	.0873					.537	.535	.772	.684	.548	.544
.05	.164	.149	.0132	.0120	.150	.137	.0599					.264	.264	.472	.412	.278	.276
.06	.159	.148	.0149	.0139	.144	.134	.0435					.149	.149	.340	.295	.164	.162
.08	.151	.144	.0177	.0168	.133	.127	.0257					.0595	.0595	.229	.202	.0772	.0762
.1	.144	.139	.0198	.0191	.124	.120	.0170					.0292	.0292	.165	.168	.0498	.0482
.15	.129	.127	.0235	.0231	.106	.104	.00787					.00815	.00815	.143	.135	.0317	.0313
.2	.119	.117	.0257	.0253	.0929	.0918	.00451					.00342	.00342	.125	.121	.0292	.0288
.3	.103	.102	.0278	.0276	.0752	.0748	.00206					.000974	.000974	.106	.103	.0288	.0286
.4	.0923	.0920	.0286	.0286	.0638	.0634	.00117					.000402	.000402	.0935	.0923	.0290	.0290
.5	.0844	.0840	.0288	.0288	.0556	.0552	.000762					.000200	.000200	.0850	.0842	.0290	.0290
.6	.0780	.0778	.0286	.0286	.0494	.0492	.000523					.000122	.000122	.0783	.0780	.0288	.0288
.8	.0684	.0684	.0280	.0278	.0404	.0406	.000295					.0000583	.0000583	.0688	.0684	.0280	.0278
1.	.0616	.0614	.0270	.0268	.0344	.0346	.000191					.0000342	.0000342	.0616	.0614	.0270	.0268
1.5	.0500	.0500	.0247	.0245	.0253	.0255	.0000863	.000198		.000198	.000063			.0502	.0502	.0249	.0245
2.	.0426	.0426	.0226	.0224	.0200	.0202	.0000490	.000780		.000780	.000379			.0434	.0434	.0233	.0227
3.	.0336	.0336	.0194	.0190	.0142	.0146	.0000218	.00220	.0000117	.00222	.00145			.0360	.0358	.0216	.0204
4.	.0280	.0280	.0170	.0165	.0110	.0115		.00364	.0000484	.00367	.00272			.0317	.0317	.0206	.0192
5.	.0243	.0243	.0152	.0147	.00902	.00964		.00486	.0000947	.00496	.00391			.0292	.0292	.0202	.0186
6.	.0214	.0214	.0138	.0131	.00762	.00826		.00591	.000143	.00605	.00498			.0274	.0274	.0198	.0181
8.	.0175	.0175	.0117	.0110	.00583	.00649		.00760	.000247	.00785	.00675			.0243	.0243	.0194	.0178
10.	.0149	.0149	.0102	.00951	.00472	.00540		.00914	.000342	.00949	.00826			.0243	.0243	.0196	.0178
15.	.0110	.0110	.00783	.00702	.00321	.00402		.0119	.000531	.0124	.0109			.0233	.0233	.0202	.0179
20.	.00886	.00886	.00643	.00554	.00243	.00332		.0139	.000680	.0146	.0125			.0235	.0235	.0210	.0180
30.	.00645	.00645	.00482	.00389	.00163	.00257		.0167	.000908	.0176	.0143			.0241	.0241	.0224	.0182
40.	.00513	.00513	.00389	.00299	.00123	.00214		.0186	.00108	.0196	.0153			.0247	.0247	.0235	.0183
50.	.00428	.00428	.00329	.00239	.000986	.00190		.0202	.00119	.0214	.0158			.0257	.0257	.0247	.0182
60.	.00369	.00369	.00286	.00196	.000824	.00173		.0214	.00130	.0227	.0160			.0264	.0264	.0257	.0180
80.	.00292	.00292	.00229	.00143	.000620	.00148		.0229	.00145	.0243	.0162			.0272	.0272	.0266	.0176
100.	.00241	.00241	.00192	.00108	.000498	.00133		.0243	.00156	.0259	.0161			.0282	.0282	.0278	.0172

16 SULFUR
(barns/atom)

E (MeV)	KN $\sigma_{inc,t}$	BD $\sigma_{inc,t}$	KN $\sigma_{inc,a}$	BD $\sigma_{inc,a}$	KN $\sigma_{inc,s}$	BD $\sigma_{inc,s}$	σ_{coh}	$\sigma_{n,n}$	$\sigma_{n,e}$	$\sigma_{n,t}$	$\sigma_{n,a}$	$\sigma_{\gamma,t}$	$\sigma_{\gamma,a}$	$\sigma_{tot,t}$	$\sigma_{tot,t-coh}$	$\sigma_{tot,a}$	$\sigma_{tot,en}$
.001	10.6	.548	.0207	.00107	10.6	.547	156.					140000.	140000.	140000.	140000.	140000.	140000.
.0015	10.6	1.04	.0309	.00303	10.6	1.04	144.					44100.	44100.	44200.	44100.	44100.	44100.
.002	10.6	1.54	.041	.00598	10.5	1.53	131.					19400.	19400.	19500.	19400.	19400.	19400.
K .002472	10.5	1.98	.0505	.00948	10.5	1.97	119.					10700.	10700.	10800.	10700.	10700.	10700.
.003	10.5	2.42	.0610	.0140	10.5	2.41	106.					131000.	123000.	131000.	131000.	131000.	123000.
.004	10.5	3.14	.0806	.0242	10.4	3.12	87.7					76400.	72700.	76500.	76400.	76400.	72700.
.005	10.4	3.73	.100	.0357	10.3	3.69	74.1					34100.	32900.	34200.	34100.	34100.	32900.
.006	10.4	4.21	.119	.0482	10.3	4.16	64.1					18200.	17700.	18300.	18200.	18200.	17700.
.008	10.3	4.99	.156	.0755	10.2	4.91	49.8					11000.	10700.	11100.	11000.	11000.	10700.
.01	10.2	5.62	.192	.105	10.1	5.51	39.6					4950.	4860.	5000.	4950.	4950.	4860.
.015	10.1	6.69	.278	.185	9.79	6.50	23.6					2660.	2620.	2710.	2670.	2660.	2620.
.02	9.89	7.31	.357	.264	9.53	7.05	15.5					801.	793.	831.	808.	801.	793.
.03	9.56	7.88	.497	.410	9.06	7.47	8.30					330.	328.	353.	337.	330.	328.
.04	9.26	8.08	.618	.539	8.64	7.54	5.24					92.2	91.8	108.	100.	92.7	92.2
.05	8.98	8.11	.725	.654	8.26	7.46	3.61					37.0	36.9	50.3	45.1	37.6	37.4
.06	8.73	8.07	.819	.757	7.91	7.31	2.63					18.2	18.1	29.9	26.3	18.9	18.8
.08	8.28	7.85	.969	.919	7.31	6.93	1.56					10.2	10.2	20.9	18.3	11.0	11.0
.1	7.88	7.59	1.09	1.05	6.80	6.54	1.02					4.13	4.12	13.5	12.0	5.10	5.04
.15	7.10	6.95	1.29	1.26	5.81	5.69	.476					2.02	2.02	10.6	9.61	3.11	3.07
.2	6.50	6.42	1.41	1.39	5.10	5.03	.274					.570	.569	8.00	7.52	1.86	1.83
.3	5.65	5.61	1.52	1.51	4.13	4.10	.125					.236	.236	6.93	6.66	1.65	1.63
.4	5.07	5.04	1.57	1.56	3.50	3.48	.0712					.0690	.0690	5.80	5.68	1.59	1.58
.5	4.63	4.61	1.58	1.58	3.05	3.03	.0463					.0284	.0284	5.14	5.07	1.60	1.59
.6	4.28	4.27	1.57	1.57	2.71	2.70	.0316					.0143	.0143	4.67	4.62	1.59	1.59
.8	3.76	3.75	1.54	1.52	2.22	2.23	.0179					.00880	.00880	4.31	4.28	1.58	1.58
1.	3.38	3.38	1.49	1.48	1.89	1.90	.0115					.00420	.00420	3.77	3.75	1.54	1.52
1.5	2.75	2.74	1.36	1.34	1.39	1.40	.00523	.0115		.0115	.00366	.00245	.00245	3.39	3.38	1.49	1.48
2.	2.34	2.34	1.24	1.23	1.10	1.11	.00296	.0459		.0459	.0223	.00110	.00110	2.76	2.75	1.37	1.34
3.	1.84	1.84	1.06	1.04	.778	.802	.00131	.129	.000645	.130	.0853			2.39	2.39	1.29	1.25
4.	1.54	1.54	.934	.907	.605	.633		.213	.00266	.216	.159			1.97	1.97	1.19	1.13
5.	1.33	1.33	.835	.801	.495	.529		.283	.00619	.289	.228			1.76	1.76	1.15	1.07
6.	1.17	1.17	.756	.715	.418	.455		.346	.0079	.354	.290			1.62	1.62	1.12	1.03
8.	.961	.961	.641	.603	.320	.358		.445	.0135	.458	.392			1.52	1.52	1.11	1.00
10.	.818	.818	.559	.517	.259	.301		.536	.0187	.555	.483			1.42	1.42	1.10	.995
15.	.606	.606	.430	.382	.176	.224		.690	.0291	.719	.626			1.37	1.37	1.11	1.00
20.	.486	.486	.353	.301	.133	.185		.811	.0372	.848	.720			1.33	1.33	1.15	1.01
30.	.354	.354	.264	.212	.0894	.142		.977	.0498	1.03	.827			1.33	1.33	1.20	1.02
40.	.281	.281	.214	.163	.0675	.118		1.09	.0591	1.15	.880			1.38	1.38	1.29	1.04
50.	.235	.235	.181	.129	.0541	.106		1.18	.0654	1.25	.908			1.43	1.43	1.36	1.04
60.	.202	.202	.157	.106	.0453	.0957		1.25	.0711	1.32	.918			1.48	1.48	1.43	1.04
80.	.160	.160	.125	.0784	.0341	.0816		1.34	.0795	1.42	.924			1.52	1.52	1.48	1.02
100.	.132	.132	.105	.0583	.0273	.0737		1.42	.0855	1.51	.921			1.58	1.58	1.55	1.00
														1.64	1.64	1.61	.979

16 SULFUR
(cm^2/g = 0.01878 x barns/atom)

E (MeV)	$(\frac{\mu}{\rho})^{KN}_{inc,t}$	$(\frac{\mu}{\rho})^{BD}_{inc,t}$	$(\frac{\mu}{\rho})^{KN}_{inc,a}$	$(\frac{\mu}{\rho})^{BD}_{inc,a}$	$(\frac{\mu}{\rho})^{KN}_{inc,s}$	$(\frac{\mu}{\rho})^{BD}_{inc,s}$	$(\frac{\mu}{\rho})_{coh}$	$(\frac{\mu}{\rho})_{\kappa n}$	$(\frac{\mu}{\rho})_{\kappa e}$	$(\frac{\mu}{\rho})_{\kappa,t}$	$(\frac{\mu}{\rho})_{\kappa,a}$	$(\frac{\mu}{\rho})_{\tau,t}$	$(\frac{\mu}{\rho})_{\tau,a}$	$(\frac{\mu}{\rho})_{tot,t}$	$(\frac{\mu}{\rho})_{tot,t-coh}$	$(\frac{\mu}{\rho})_{tot,a}$	$(\frac{\mu}{\rho})_{tot,en}$
.001	.199	.0103	.000389	.0000201	.199	.0103	2.93					2630.	2630.	2630.	2630.	2630.	2630.
.0015	.199	.0195	.000580	.0000569	.199	.0195	2.70					828.	828.	830.	828.	828.	828.
.002	.199	.0289	.000770	.000112	.197	.0287	2.46					364.	364.	366.	364.	364.	364.
K .002472	.197	.0372	.000948	.000178	.197	.0370	2.23					201.	201.	203.	201.	201.	201.
												2460.	2310.	2460.	2460.	2460.	2310.
.003	.197	.0454	.00115	.000263	.197	.0453	1.99					1430.	1370.	1440.	1430.	1430.	1370.
.004	.197	.0590	.00151	.000454	.195	.0586	1.65					640.	618.	642.	640.	640.	618.
.005	.195	.0700	.00188	.000670	.193	.0693	1.39					342.	332.	344.	342.	342.	332.
.006	.195	.0791	.00223	.000905	.193	.0781	1.20					207.	201.	208.	207.	207.	201.
.008	.193	.0937	.00293	.00142	.192	.0922	.935					93.0	91.3	93.9	93.0	93.0	91.3
.01	.192	.106	.00361	.00197	.190	.103	.744					50.0	49.2	50.9	50.1	50.0	49.2
.015	.190	.126	.00522	.00347	.184	.122	.443					15.0	14.9	15.6	15.2	15.0	14.9
.02	.186	.137	.00670	.00496	.179	.132	.291					6.20	6.16	6.63	6.33	6.20	6.16
.03	.180	.148	.00933	.00770	.170	.140	.156					1.73	1.72	2.03	1.88	1.74	1.73
.04	.174	.152	.0116	.0101	.162	.142	.0984					.695	.693	.945	.847	.706	.702
.05	.169	.152	.0136	.0123	.155	.140	.0678					.342	.340	.562	.494	.355	.353
.06	.164	.152	.0154	.0142	.149	.137	.0494					.192	.192	.393	.344	.207	.207
.08	.155	.147	.0182	.0173	.137	.130	.0293					.0776	.0774	.254	.225	.0958	.0947
.1	.148	.143	.0205	.0197	.128	.123	.0192					.0379	.0379	.199	.180	.0584	.0577
.15	.133	.131	.0242	.0237	.109	.107	.00894					.0107	.0107	.150	.141	.0349	.0344
.2	.122	.121	.0265	.0261	.0958	.0945	.00515					.00443	.00443	.130	.125	.0310	.0306
.3	.108	.105	.0285	.0284	.0776	.0770	.00235					.00130	.00130	.109	.107	.0299	.0297
.4	.0952	.0947	.0295	.0293	.0657	.0654	.00134					.000533	.000533	.0965	.0952	.0300	.0299
.5	.0870	.0866	.0297	.0297	.0573	.0569	.000870					.000269	.000269	.0877	.0868	.0299	.0299
.6	.0804	.0802	.0295	.0295	.0509	.0507	.000593					.000165	.000165	.0809	.0804	.0297	.0297
.8	.0706	.0704	.0289	.0285	.0417	.0419	.000336					.0000789	.0000789	.0708	.0704	.0289	.0285
1.	.0635	.0635	.0280	.0278	.0355	.0357	.000216					.0000460	.0000460	.0637	.0635	.0280	.0278
1.5	.0516	.0515	.0255	.0252	.0261	.0263	.0000982	.000216		.000216	.0000687	.0000207	.0000207	.0518	.0516	.0257	.0252
2.	.0439	.0439	.0233	.0231	.0207	.0208	.0000556	.000862		.000862	.000419			.0449	.0449	.0242	.0235
3.	.0346	.0346	.0199	.0195	.0146	.0151	.0000246	.00242	.0000121	.00244	.00160			.0370	.0370	.0223	.0212
4.	.0289	.0289	.0175	.0170	.0114	.0119		.00400	.0000500	.00406	.00299			.0331	.0331	.0216	.0201
5.	.0250	.0250	.0157	.0150	.00930	.00993		.00531	.000116	.00543	.00428			.0304	.0304	.0210	.0193
6.	.0220	.0220	.0142	.0134	.00785	.00854		.00650	.000148	.00665	.00545			.0285	.0285	.0208	.0188
8.	.0180	.0180	.0120	.0113	.00601	.00672		.00836	.000254	.00860	.00736			.0267	.0267	.0207	.0187
10.	.0154	.0154	.0105	.00971	.00486	.00565		.0101	.000351	.0104	.00907			.0257	.0257	.0208	.0188
15.	.0114	.0114	.00808	.00717	.00331	.00421		.0130	.000546	.0135	.0118			.0250	.0250	.0216	.0190
20.	.00913	.00913	.00663	.00565	.00250	.00347		.0152	.000699	.0159	.0135			.0250	.0250	.0225	.0192
30.	.00665	.00665	.00496	.00398	.00168	.00267		.0183	.000935	.0193	.0155			.0259	.0259	.0242	.0195
40.	.00528	.00528	.00402	.00306	.00127	.00222		.0205	.00111	.0216	.0165			.0269	.0269	.0255	.0198
50.	.00441	.00441	.00340	.00242	.00102	.00199		.0222	.00123	.0235	.0171			.0278	.0278	.0269	.0195
60.	.00379	.00379	.00295	.00199	.000851	.00180		.0235	.00134	.024R	.0172			.0285	.0285	.0278	.0192
80.	.00300	.00300	.00235	.00147	.000640	.00153		.0252	.00149	.0267	.0174			.0297	.0297	.0291	.0188
100.	.00248	.00248	.00197	.00109	.000513	.00138		.0267	.00161	.0284	.0173			.0308	.030R	.0302	.0184

17 CHLORINE
(barns/atom)

E (MeV)	$\sigma^{KN}_{inc,t}$	$\sigma^{BD}_{inc,t}$	$\sigma^{KN}_{inc,a}$	$\sigma^{BD}_{inc,a}$	$\sigma^{KN}_{inc,s}$	$\sigma^{BD}_{inc,s}$	σ_{coh}	σ_{n_n}	σ_{n_e}	$\sigma_{n,t}$	$\sigma_{n,a}$	$\sigma_{r,t}$	$\sigma_{r,a}$	$\sigma_{tot,t}$	$\sigma_{tot,t-coh}$	$\sigma_{tot,a}$	$\sigma_{tot,en}$
.001	11.3	.516	.0219	.00101	11.2	.515	178.					181000.	181000.	181000.	181000.	181000.	181000.
.0015	11.2	1.00	.0328	.00292	11.2	.997	165.					57600.	57600.	57600.	57600.	57600.	57600.
.002	11.2	1.51	.0435	.00586	11.2	1.50	151.					25400.	25400.	25600.	25400.	25400.	25400.
K .002824	11.2	2.30	.0611	.0126	11.1	2.29	127.					9530.	9530.	9660.	9530.	9520.	9530.
												113000.	105000.	113000.	113000.	113000.	105000.
.003	11.2	2.45	.0648	.0142	11.1	2.44	123.					96000.	89400.	96100.	96000.	96000.	89400.
.004	11.1	3.24	.0857	.0249	11.0	3.22	101.					43000.	40800.	43100.	43000.	43000.	40800.
.005	11.1	3.90	.106	.0374	11.0	3.86	84.4					23100.	22100.	23200.	23100.	23100.	22100.
.006	11.0	4.43	.126	.0507	10.9	4.38	72.4					13900.	13400.	14000.	13900.	13900.	13400.
.008	11.0	5.26	.166	.0796	10.8	5.18	56.0					6220.	6060.	6280.	6230.	6220.	6060.
.01	10.9	5.91	.204	.111	10.7	5.80	44.8					3400.	3330.	3450.	3410.	3400.	3330.
.015	10.7	7.02	.296	.194	10.4	6.83	27.2					1030.	1020.	1060.	1040.	1030.	1020.
.02	10.5	7.69	.379	.278	10.1	7.41	17.9					428.	424.	454.	436.	428.	424.
.03	10.2	8.31	.529	.432	9.63	7.88	9.59					120.	119.	138.	128.	121.	119.
.04	9.84	8.53	.656	.569	9.18	7.96	6.05					48.7	48.4	63.3	57.2	49.4	49.0
.05	9.54	8.57	.770	.691	8.78	7.88	4.18					24.1	24.0	36.8	32.7	24.9	24.7
.06	9.28	8.53	.870	.800	8.41	7.73	3.05					13.5	13.5	25.1	22.0	14.4	14.3
.08	8.79	8.31	1.03	.973	7.76	7.34	1.81					5.48	5.47	15.6	13.8	6.51	6.44
.1	8.38	8.04	1.16	1.11	7.22	6.93	1.19					2.70	2.69	11.9	10.7	3.86	3.80
.15	7.54	7.38	1.37	1.34	6.17	6.04	.554					.770	.769	8.70	8.15	2.14	2.11
.2	6.91	6.81	1.49	1.47	5.42	5.34	.318					.317	.317	7.44	7.13	1.81	1.79
.3	6.01	5.96	1.62	1.61	4.39	4.35	.145					.0910	.0909	6.20	6.05	1.71	1.70
.4	5.38	5.36	1.67	1.66	3.72	3.70	.0830					.0380	.0380	5.48	5.40	1.71	1.70
.5	4.91	4.90	1.68	1.68	3.24	3.22	.0540					.0196	.0196	4.97	4.92	1.70	1.70
.6	4.55	4.53	1.67	1.66	2.88	2.87	.0370					.0120	.0120	4.58	4.54	1.68	1.67
.8	3.99	3.99	1.63	1.62	2.36	2.37	.0210					.00580	.00580	4.02	4.00	1.64	1.63
1.	3.59	3.59	1.58	1.57	2.01	2.02	.0134					.00340	.00340	3.61	3.59	1.58	1.57
1.5	2.92	2.91	1.44	1.43	1.47	1.48	.0061	.0131		.0131	.00417	.00160	.00160	2.93	2.92	1.45	1.44
2.	2.49	2.49	1.32	1.31	1.17	1.18	.00345	.0518		.0518	.0252	.00100	.00100	2.55	2.54	1.37	1.36
3.	1.96	1.96	1.13	1.10	.827	.857	.00152	.146	.000686	.147	.0964			2.11	2.11	1.28	1.20
4.	1.64	1.64	.992	.963	.643	.677		.240	.00281	.243	.179			1.88	1.88	1.23	1.14
5.	1.41	1.41	.887	.847	.525	.563		.320	.00550	.325	.256			1.73	1.73	1.21	1.10
6.	1.25	1.25	.804	.762	.444	.488		.390	.00840	.398	.326			1.65	1.65	1.20	1.09
8.	1.02	1.02	.681	.635	.340	.385		.500	.0144	.514	.439			1.53	1.53	1.20	1.07
10.	.870	.870	.594	.547	.275	.323		.604	.0199	.624	.541			1.49	1.49	1.22	1.09
15.	.644	.644	.457	.404	.187	.240		.780	.0310	.811	.709			1.45	1.45	1.27	1.11
20.	.517	.517	.375	.318	.141	.199		.913	.0396	.953	.801			1.47	1.47	1.33	1.12
30.	.376	.376	.281	.223	.0950	.153		1.10	.0529	1.15	.921			1.53	1.53	1.43	1.14
40.	.299	.299	.227	.172	.0717	.127		1.23	.0629	1.29	.980			1.59	1.59	1.52	1.15
50.	.250	.250	.192	.136	.0575	.114		1.33	.0693	1.40	1.01			1.65	1.65	1.59	1.15
60.	.215	.215	.167	.112	.0481	.103		1.40	.0755	1.48	1.01			1.69	1.69	1.65	1.12
80.	.169	.169	.133	.0820	.0362	.0878		1.50	.0843	1.58	1.02			1.75	1.75	1.71	1.10
100.	.141	.141	.112	.0618	.0290	.0792		1.60	.0907	1.69	1.02			1.83	1.83	1.80	1.08

17 CHLORINE

(cm^2/g = 0.01699 x barns/atom)

E (MeV)	$(\frac{\mu}{\rho})^{KN}_{inc,t}$	$(\frac{\mu}{\rho})^{BD}_{inc,t}$	$(\frac{\mu}{\rho})^{KN}_{inc,a}$	$(\frac{\mu}{\rho})^{BD}_{inc,a}$	$(\frac{\mu}{\rho})^{KN}_{inc,s}$	$(\frac{\mu}{\rho})^{BD}_{inc,s}$	$(\frac{\mu}{\rho})_{coh}$	$(\frac{\mu}{\rho})_{\kappa n}$	$(\frac{\mu}{\rho})_{\kappa e}$	$(\frac{\mu}{\rho})_{\kappa,t}$	$(\frac{\mu}{\rho})_{\kappa,a}$	$(\frac{\mu}{\rho})_{\tau,t}$	$(\frac{\mu}{\rho})_{\tau,a}$	$(\frac{\mu}{\rho})_{tot,t}$	$(\frac{\mu}{\rho})_{tot,t-coh}$	$(\frac{\mu}{\rho})_{tot,a}$	$(\frac{\mu}{\rho})_{tot,en}$
.001	.192	.00877	.000372	.0000172	.190	.00875	3.02					3080.	3080.	3080.	3080.	3080.	3080.
.0015	.190	.0170	.000557	.0000496	.190	.0169	2.80					979.	979.	982.	979.	979.	979.
.002	.190	.0257	.000739	.0000996	.190	.0255	2.57					432.	432.	435.	432.	432.	432.
K .002824	.190	.0391	.00104	.000214	.189	.0389	2.16					162.	162.	164.	162.	162.	162.
												1920.	1780.	1920.	1920.	1920.	1780.
.003	.190	.0416	.00110	.000241	.189	.0415	2.09					1630.	1520.	1630.	1630.	1630.	1520.
.004	.189	.0550	.00146	.000423	.187	.0547	1.72					731.	693.	732.	731.	731.	693.
.005	.189	.0663	.00180	.000635	.187	.0656	1.43					392.	375.	394.	392.	392.	375.
.006	.187	.0753	.00214	.000861	.185	.0744	1.23					236.	228.	238.	236.	236.	228.
.008	.187	.0894	.00282	.00135	.183	.0880	.951					106.	103.	107.	106.	106.	103.
.01	.185	.100	.00347	.00189	.182	.0985	.761					57.8	56.6	58.6	57.9	57.8	56.6
.015	.182	.119	.00503	.00330	.177	.116	.462					17.5	17.3	18.0	17.7	17.5	17.3
.02	.178	.131	.00644	.00472	.172	.126	.304					7.27	7.20	7.71	7.41	7.27	7.20
.03	.173	.141	.00899	.00734	.164	.134	.163					2.04	2.02	2.34	2.17	2.06	2.02
.04	.167	.145	.0111	.00967	.156	.135	.103					.827	.822	1.08	.972	.839	.833
.05	.162	.146	.0131	.0117	.149	.134	.0710					.409	.408	.625	.556	.423	.420
.06	.158	.145	.0148	.0136	.143	.131	.0518					.229	.229	.426	.374	.245	.243
.08	.149	.141	.0175	.0165	.132	.125	.0308					.0931	.0929	.265	.234	.111	.109
.1	.142	.137	.0197	.0189	.123	.118	.0202					.0459	.0457	.202	.187	.0656	.0646
.15	.128	.125	.0233	.0228	.105	.103	.00941					.0131	.0131	.148	.138	.0364	.0358
.2	.117	.116	.0253	.0250	.0921	.0907	.00540					.00539	.00539	.126	.121	.0308	.0304
.3	.102	.101	.0275	.0274	.0746	.0739	.00246					.00155	.00154	.105	.103	.0291	.0289
.4	.0914	.0911	.0284	.0282	.0632	.0629	.00141					.000646	.000646	.0931	.0917	.0291	.0289
.5	.0834	.0833	.0285	.0285	.0550	.0547	.000917					.000333	.000333	.0844	.0836	.0289	.0289
.6	.0773	.0770	.0284	.0282	.0489	.0488	.000629					.000204	.000204	.0778	.0771	.0285	.0284
.8	.0678	.0678	.0277	.0275	.0401	.0403	.000357					.0000985	.0000985	.0683	.0680	.0279	.0277
1.	.0610	.0610	.0268	.0267	.0341	.0343	.000228					.0000578	.0000578	.0613	.0610	.0268	.0267
1.5	.0496	.0494	.0245	.0243	.0250	.0251	.000104	.000223		.000223	.0000708	.0000272	.0000272	.0498	.0496	.0246	.0245
2.	.0423	.0423	.0224	.0223	.0199	.0200	.0000586	.000880		.00088	.000428	.0000170	.0000170	.0433	.0432	.0233	.0228
3.	.0333	.0333	.0192	.0187	.0141	.0146	.0000258	.00248	.0000117	.00250	.00164			.0358	.0358	.0217	.0204
4.	.0279	.0279	.0169	.0164	.0109	.0115		.00408	.0000477	.00413	.00304			.0319	.0319	.0209	.0194
5.	.0240	.0240	.0151	.0144	.00892	.00957		.00544	.0000934	.00552	.00435			.0294	.0294	.0206	.0187
6.	.0212	.0212	.0137	.0129	.00754	.00829		.00663	.000143	.00676	.00554			.0280	.0280	.0204	.0185
8.	.0173	.0173	.0116	.0108	.00578	.00654		.00849	.000245	.00873	.00746			.0260	.0260	.0204	.0182
10.	.0148	.0148	.0101	.00929	.00467	.00549		.0103	.000338	.0106	.00919			.0253	.0253	.0207	.0185
15.	.0109	.0109	.00776	.00686	.00318	.00408		.0133	.000527	.0138	.0120			.0246	.0246	.0216	.0189
20.	.00878	.00878	.00637	.00540	.00240	.00338		.0155	.000673	.0162	.0136			.0250	.0250	.0226	.0190
30.	.00639	.00639	.00477	.00379	.00161	.0026		.0187	.000899	.0195	.0156			.0260	.0260	.0243	.0194
40.	.00508	.00508	.00386	.00292	.00122	.00216		.0209	.00107	.0219	.0167			.0270	.0270	.0258	.0195
50.	.00425	.00425	.00326	.00231	.000977	.00194		.0226	.00118	.0238	.0172			.0280	.0280	.0270	.0195
60.	.00365	.00365	.00284	.00190	.000817	.00175		.0238	.00128	.0251	.0172			.0287	.0287	.0280	.0190
80.	.00287	.00287	.00226	.00139	.000615	.00148		.0255	.00143	.0268	.0173			.0297	.0297	.0291	.0187
100.	.00240	.00240	.00190	.00105	.000493	.00135		.0272	.00154	.0287	.0173			.0311	.0311	.0306	.0183

18 ARGON
(barns/atom)

E (MeV)	KN $\sigma_{inc,t}$	BD $\sigma_{inc,t}$	KN $\sigma_{inc,a}$	BD $\sigma_{inc,a}$	KN $\sigma_{inc,s}$	BD $\sigma_{inc,s}$	σ_{coh}	$\sigma_{\kappa n}$	$\sigma_{\kappa e}$	$\sigma_{\kappa,t}$	$\sigma_{\kappa,a}$	$\sigma_{r,t}$	$\sigma_{r,a}$	$\sigma_{tot,t}$	$\sigma_{tot,t-coh}$	$\sigma_{tot,a}$	$\sigma_{tot,en}$
.001	11.9	.477	.0232	.000929	11.9	.476	201.					235000.	235000.	235000.	235000.	235000.	235000.
.0015	11.9	.949	.0347	.00277	11.9	.946	188.					73800.	73800.	74000.	73800.	73800.	73800.
.002	11.9	1.47	.0461	.00570	11.8	1.46	172.					32700.	32700.	32900.	32700.	32700.	32700.
.003	11.8	2.46	.0686	.0143	11.8	2.45	141.					10300.	10300.	10400.	10300.	10300.	10300.
K .003203	11.8	2.64	.0731	.0163	11.8	2.62	135.					8560.	8560.	8700.	8560.	8560.	8560.
												98100.	89400.	98200.	98100.	98100.	89400.
.004	11.8	3.33	.0907	.0256	11.7	3.30	116.					52900.	49200.	53000.	52900.	52900.	49200.
.005	11.7	4.04	.112	.0387	11.6	4.00	98.3					28600.	27000.	28700.	28600.	28600.	27000.
.006	11.7	4.62	.134	.0529	11.6	4.57	82.1					17300.	16500.	17400.	17300.	17300.	16500.
.008	11.6	5.51	.176	.0834	11.4	5.43	63.0					7800.	7520.	7870.	7810.	7800.	7520.
.01	11.5	6.18	.216	.116	11.3	6.06	50.4					4230.	4110.	4290.	4240.	4230.	4110.
.015	11.3	7.34	.313	.203	11.0	7.14	31.1					1300.	1280.	1340.	1310.	1300.	1280.
.02	11.1	8.06	.401	.291	10.7	7.77	20.6					542.	534.	571.	550.	542.	534.
.03	10.8	8.73	.560	.454	10.2	8.28	11.0					152.	151.	172.	161.	153.	151.
.04	10.4	8.97	.695	.598	9.72	8.37	6.96					62.0	61.6	77.9	71.0	62.7	62.2
.05	10.1	9.03	.815	.729	9.29	8.30	4.81					30.8	30.6	44.6	39.8	31.6	31.3
.06	9.82	8.99	.921	.844	8.90	8.15	3.52					17.5	17.4	30.0	26.5	18.4	18.2
.08	9.31	8.77	1.09	1.03	8.22	7.74	2.09					7.20	7.17	18.1	16.0	8.29	8.20
.1	8.87	8.49	1.22	1.17	7.65	7.32	1.38					3.61	3.60	13.5	12.1	4.83	4.77
.15	7.98	7.80	1.45	1.42	6.54	6.38	.641					1.02	1.02	9.46	8.82	2.47	2.44
.2	7.32	7.21	1.58	1.56	5.73	5.65	.369					.420	.419	8.00	7.63	2.00	1.98
.3	6.36	6.31	1.72	1.70	4.65	4.61	.168					.120	.120	6.60	6.43	1.84	1.82
.4	5.70	5.67	1.77	1.76	3.93	3.91	.0960					.0502	.0502	5.82	5.72	1.82	1.81
.5	5.20	5.18	1.78	1.77	3.43	3.41	.0626					.0262	.0262	5.27	5.21	1.81	1.80
.6	4.81	4.80	1.77	1.76	3.05	3.04	.0427					.0160	.0160	4.86	4.82	1.79	1.78
.8	4.23	4.22	1.73	1.71	2.50	2.51	.0243					.00780	.00780	4.25	4.23	1.74	1.72
1.	3.80	3.80	1.67	1.66	2.13	2.14	.0156					.00460	.00460	3.82	3.80	1.67	1.66
1.5	3.09	3.09	1.53	1.51	1.56	1.58	.00706	.0147		.0147	.00467	.00225	.00225	3.11	3.11	1.55	1.52
2.	2.63	2.63	1.40	1.38	1.24	1.25	.00400	.0580		.0580	.0282	.00135	.00135	2.69	2.69	1.44	1.41
3.	2.07	2.07	1.20	1.16	.876	.907	.00176	.163	.000727	.164	.107			2.24	2.23	1.36	1.27
4.	1.73	1.73	1.05	1.01	.681	.718		.270	.00298	.273	.201			2.00	2.00	1.32	1.21
5.	1.50	1.50	.939	.900	.556	.600		.357	.00583	.363	.284			1.86	1.86	1.30	1.18
6.	1.32	1.32	.851	.804	.471	.516		.440	.00892	.449	.367			1.77	1.77	1.30	1.17
8.	1.08	1.08	.721	.671	.360	.409		.561	.0153	.576	.491			1.66	1.66	1.30	1.16
10.	.921	.921	.629	.577	.291	.344		.676	.0211	.697	.602			1.62	1.62	1.33	1.18
15.	.681	.681	.484	.425	.198	.256		.870	.0330	.903	.779			1.58	1.58	1.39	1.20
20.	.547	.547	.397	.335	.150	.212		1.02	.0419	1.06	.890			1.61	1.61	1.46	1.23
30.	.398	.398	.298	.235	.101	.163		1.23	.0560	1.29	1.02			1.69	1.69	1.59	1.26
40.	.316	.316	.240	.180	.0760	.136		1.38	.0664	1.45	1.08			1.77	1.77	1.69	1.26
50.	.264	.264	.203	.142	.0608	.122		1.48	.0733	1.55	1.10			1.81	1.81	1.75	1.24
60.	.228	.228	.177	.118	.0509	.110		1.57	.0799	1.65	1.12			1.88	1.88	1.83	1.24
80.	.179	.179	.141	.0841	.0383	.0949		1.69	.0891	1.78	1.12			1.96	1.96	1.92	1.20
100.	.149	.149	.118	.0638	.0307	.0852		1.79	.0959	1.89	1.12			2.04	2.04	2.01	1.18

18 ARGON

(cm^2/g = 0.01508 x barns/atom)

E (MeV)	$(\frac{\mu}{\rho})^{KN}_{inc,t}$	$(\frac{\mu}{\rho})^{BD}_{inc,t}$	$(\frac{\mu}{\rho})^{KN}_{inc,a}$	$(\frac{\mu}{\rho})^{BD}_{inc,a}$	$(\frac{\mu}{\rho})^{KN}_{inc,s}$	$(\frac{\mu}{\rho})^{BD}_{inc,s}$	$(\frac{\mu}{\rho})_{coh}$	$(\frac{\mu}{\rho})_{\kappa n}$	$(\frac{\mu}{\rho})_{\kappa e}$	$(\frac{\mu}{\rho})_{\kappa,t}$	$(\frac{\mu}{\rho})_{\kappa,a}$	$(\frac{\mu}{\rho})_{\tau,t}$	$(\frac{\mu}{\rho})_{\tau,a}$	$(\frac{\mu}{\rho})_{tot,t}$	$(\frac{\mu}{\rho})_{tot,t-coh}$	$(\frac{\mu}{\rho})_{tot,a}$	$(\frac{\mu}{\rho})_{tot,en}$
.001	.179	.00719	.000350	.0000140	.179	.00718	3.03					3540.	3540.	3540.	3540.	3540.	3540.
.0015	.179	.0143	.000523	.0000418	.179	.0143	2.84					1110.	1110.	1120.	1110.	1110.	1110.
.002	.179	.0222	.000695	.0000860	.178	.0220	2.59					493.	493.	496.	493.	493.	493.
.003	.178	.0371	.00103	.000216	.178	.0369	2.13					155.	155.	157.	155.	155.	155.
K .003203	.178	.0398	.00110	.000246	.178	.0395	2.04					129.	129.	131.	129.	129.	129.
												1480.	1350.	1480.	1480.	1480.	1350.
.004	.178	.0502	.00137	.000386	.176	.0498	1.75					798.	742.	799.	798.	798.	742.
.005	.176	.0609	.00169	.000584	.175	.0603	1.45					431.	407.	433.	431.	431.	407.
.006	.176	.0697	.00202	.000798	.175	.0689	1.24					261.	249.	262.	261.	261.	249.
.008	.175	.0831	.00265	.00126	.172	.0819	.950					118.	113.	119.	118.	118.	113.
.01	.173	.0932	.00326	.00175	.170	.0914	.760					63.8	62.0	64.7	63.9	63.8	62.0
.015	.170	.111	.00472	.00306	.166	.108	.489					19.6	19.3	20.2	19.8	19.6	19.3
.02	.167	.122	.00605	.00439	.161	.117	.311					8.17	8.05	8.61	8.29	8.17	8.05
.03	.163	.132	.00844	.00685	.154	.125	.166					2.29	2.28	2.59	2.43	2.31	2.28
.04	.157	.135	.0105	.00902	.147	.126	.105					.935	.929	1.17	1.07	.946	.938
.05	.152	.136	.0123	.0110	.140	.125	.0725					.464	.461	.673	.600	.477	.472
.06	.148	.136	.0139	.0127	.134	.123	.0531					.264	.262	.452	.400	.277	.274
.08	.140	.132	.0164	.0155	.124	.117	.0315					.109	.108	.273	.241	.125	.124
.1	.134	.128	.0184	.0176	.115	.110	.0208					.0544	.0543	.204	.182	.0728	.0719
.15	.120	.118	.0219	.0214	.0986	.0962	.00967					.0154	.0154	.143	.133	.0372	.0368
.2	.110	.109	.0238	.0235	.0864	.0852	.00556					.00633	.00632	.121	.115	.0302	.0299
.3	.0959	.0952	.0259	.0256	.0701	.0695	.00253					.00181	.00181	.0995	.0970	.0277	.0274
.4	.0860	.0855	.0267	.0265	.0593	.0590	.00145					.000757	.000757	.0878	.0863	.0274	.0273
.5	.0784	.0781	.0268	.0267	.0517	.0514	.000944					.000395	.000395	.0795	.0786	.0273	.0271
.6	.0725	.0724	.0267	.0265	.0460	.0458	.000644					.000241	.000241	.0733	.0727	.0270	.0268
.8	.0638	.0636	.0261	.0258	.0377	.0379	.000366					.000118	.000118	.0641	.0638	.0262	.0259
1.	.0573	.0573	.0252	.0250	.0321	.0323	.000235					.0000694	.0000694	.0576	.0573	.0252	.0250
1.5	.0466	.0466	.0231	.0228	.0235	.0238	.000106	.000222		.000222	.0000704	.0000339	.0000339	.0469	.0469	.0234	.0229
2.	.0397	.0397	.0211	.0208	.0187	.0188	.0000603	.000875		.000875	.000425	.0000204	.0000204	.0406	.0406	.0220	.0213
3.	.0312	.0312	.0181	.0175	.0132	.0137	.0000265	.00246	.0000110	.00247	.00161			.0338	.0336	.0205	.0192
4.	.0261	.0261	.0158	.0152	.0103	.0108		.00407	.0000449	.00412	.00303			.0302	.0302	.0199	.0182
5.	.0226	.0226	.0142	.0136	.00838	.00905		.00538	.0000879	.00547	.00428			.0280	.0280	.0196	.0178
6.	.0199	.0199	.0128	.0121	.00710	.00778		.00664	.000135	.00677	.00553			.0267	.0267	.0196	.0176
8.	.0163	.0163	.0109	.0101	.00543	.00617		.00846	.000231	.00869	.00740			.0250	.0250	.0196	.0175
10.	.0139	.0139	.00949	.00870	.00439	.00519		.0102	.000318	.0105	.00908			.0244	.0244	.0201	.0178
15.	.0103	.0103	.00730	.00641	.00299	.00386		.0131	.000498	.0136	.0117			.0238	.0238	.0218	.0181
20.	.00825	.00825	.00599	.00505	.00226	.00320		.0154	.000632	.0160	.0134			.0243	.0243	.0228	.0185
30.	.00600	.00600	.00449	.00354	.00152	.00246		.0185	.000844	.0195	.0154			.0255	.0255	.0248	.0190
40.	.00477	.00477	.00362	.00271	.00115	.00205		.0208	.00100	.0219	.0163			.0267	.0267	.0255	.0190
50.	.00398	.00398	.00306	.00214	.000917	.00184		.0223	.00111	.0234	.0166			.0273	.0273	.0264	.0187
60.	.00344	.00344	.00267	.00178	.000768	.00166		.0237	.00120	.0249	.0169			.0284	.0284	.0276	.0187
80.	.00270	.00270	.00213	.00127	.000578	.00143		.0255	.00134	.0268	.0169			.0296	.0296	.0290	.0181
100.	.00225	.00225	.00178	.000962	.000463	.00128		.0270	.00145	.0285	.0169			.0308	.0308	.0303	.0178

19 POTASSIUM
(barns/atom)

E (MeV)	$\sigma^{KN}_{inc,t}$	$\sigma^{BD}_{inc,t}$	$\sigma^{KN}_{inc,a}$	$\sigma^{BD}_{inc,a}$	$\sigma^{KN}_{inc,s}$	$\sigma^{BD}_{inc,s}$	σ_{coh}	σ_{x_n}	σ_{x_e}	$\sigma_{x,t}$	$\sigma_{x,a}$	$\sigma_{\gamma,t}$	$\sigma_{\gamma,a}$	$\sigma_{tot,t}$	$\sigma_{tot,t-coh}$	$\sigma_{tot,a}$	$\sigma_{tot,en}$
.001	12.6	.786	.0245	.00153	12.6	.784	217.					298000.	298000.	298000.	298000.	298000.	298000.
.0015	12.6	1.27	.0367	.00370	12.5	1.27	201.					93500.	93500.	93700.	93500.	93500.	93500.
.002	12.5	1.76	.0487	.00683	12.5	1.75	185.					41500.	41500.	41700.	41500.	41500.	41500.
.003	12.5	2.70	.0724	.0156	12.4	2.68	154.					13000.	13000.	13200.	13000.	13000.	13000.
K .003607	12.5	3.22	.0866	.0224	12.4	3.20	138.					7740.	7740.	7880.	7740.	7740.	7740.
												86000.	76700.	86100.	86000.	86000.	76700.
.004	12.4	3.55	.0958	.0273	12.3	3.52	128.					64200.	58000.	64300.	64200.	64200.	58000.
.005	12.4	4.27	.119	.0409	12.3	4.23	107.					34800.	32100.	34900.	34800.	34800.	32100.
.006	12.3	4.87	.141	.0558	12.2	4.81	91.0					21100.	19700.	21200.	21100.	21100.	19700.
.008	12.3	5.81	.186	.088	12.1	5.72	69.5					9600.	9130.	9680.	9610.	9600.	9130.
.01	12.2	6.50	.228	.122	11.9	6.38	55.7					5200.	5000.	5260.	5210.	5200.	5000.
.015	11.9	7.69	.330	.213	11.6	7.48	34.8					1610.	1570.	1650.	1620.	1610.	1570.
.02	11.7	8.44	.424	.305	11.3	8.14	23.3					678.	665.	710.	686.	678.	665.
.03	11.4	9.16	.591	.477	10.8	8.68	12.5					195.	192.	217.	204.	196.	192.
.04	11.2	9.42	.733	.628	10.3	8.79	7.89					78.6	77.8	95.9	88.0	79.3	78.4
.05	10.7	9.49	.861	.766	9.81	8.72	5.46					39.4	39.1	54.3	48.9	40.3	39.9
.06	10.4	9.45	.973	.887	9.40	8.56	4.01					22.2	22.1	35.7	31.6	23.2	23.0
.08	9.83	9.23	1.15	1.08	8.68	8.15	2.39					9.22	9.18	20.8	18.4	10.4	10.3
.1	9.36	8.94	1.29	1.23	8.07	7.71	1.57					4.60	4.58	15.1	13.5	5.89	5.81
.15	8.43	8.22	1.53	1.49	6.90	6.73	.731					1.31	1.31	10.3	9.53	2.84	2.80
.2	7.72	7.60	1.67	1.64	6.05	5.96	.421					.537	.536	8.56	8.14	2.21	2.18
.3	6.71	6.66	1.81	1.80	4.91	4.86	.191					.154	.154	7.00	6.81	1.96	1.95
.4	6.02	5.98	1.86	1.85	4.15	4.13	.109					.0645	.0644	6.15	6.04	1.92	1.91
.5	5.49	5.47	1.87	1.87	3.62	3.60	.0711					.0344	.0344	5.58	5.50	1.90	1.90
.6	5.08	5.07	1.87	1.86	3.21	3.21	.0490					.0210	.0210	5.14	5.09	1.89	1.88
.8	4.46	4.45	1.83	1.80	2.64	2.65	.0278					.0103	.0103	4.49	4.46	1.84	1.81
1.	4.01	4.01	1.77	1.75	2.25	2.26	.0178					.00613	.00613	4.03	4.02	1.78	1.76
1.5	3.26	3.26	1.61	1.59	1.65	1.67	.00810	.0165		.0165	.00525	.00300	.00300	3.29	3.28	1.63	1.60
2.	2.78	2.78	1.48	1.46	1.30	1.32	.00458	.0647		.0647	.0314	.00182	.00182	2.85	2.85	1.55	1.49
3.	2.19	2.19	1.26	1.23	.924	.961	.00204	.181	.000767	.182	.119			2.37	2.37	1.44	1.35
4.	1.83	1.83	1.11	1.07	.719	.761	.00115	.300	.00315	.303	.223			2.13	2.13	1.41	1.29
5.	1.58	1.58	.991	.946	.587	.634		.400	.00615	.406	.318			1.99	1.99	1.40	1.26
6.	1.39	1.39	.898	.844	.497	.546		.490	.00942	.499	.407			1.89	1.89	1.40	1.25
8.	1.14	1.14	.761	.707	.380	.433		.625	.0161	.641	.545			1.78	1.78	1.40	1.25
10.	.972	.972	.664	.606	.308	.366		.755	.0223	.777	.670			1.75	1.75	1.44	1.28
15.	.719	.719	.511	.446	.209	.273		.970	.0348	1.00	.863			1.72	1.72	1.51	1.31
20.	.577	.577	.420	.353	.158	.224		1.13	.0442	1.17	.975			1.75	1.75	1.59	1.33
30.	.420	.420	.314	.244	.106	.176		1.37	.0590	1.43	1.12			1.85	1.85	1.74	1.36
40.	.334	.334	.254	.186	.0802	.148		1.53	.0700	1.60	1.19			1.93	1.93	1.85	1.38
50.	.279	.279	.215	.146	.0642	.133		1.65	.0772	1.73	1.21			2.01	2.01	1.94	1.36
60.	.240	.240	.186	.119	.0538	.121		1.74	.0841	1.82	1.22			2.06	2.06	2.01	1.34
80.	.189	.189	.149	.0832	.0405	.106		1.87	.0940	1.96	1.22			2.15	2.15	2.11	1.30
100.	.157	.157	.125	.0612	.0324	.0958		1.99	.101	2.09	1.22			2.25	2.25	2.22	1.28

19 POTASSIUM
(cm^2/g = 0.01540 x barns/atom)

E (MeV)	$(\frac{\mu}{\rho})^{KN}_{inc,t}$	$(\frac{\mu}{\rho})^{BD}_{inc,t}$	$(\frac{\mu}{\rho})^{KN}_{inc,a}$	$(\frac{\mu}{\rho})^{BD}_{inc,a}$	$(\frac{\mu}{\rho})^{KN}_{inc,s}$	$(\frac{\mu}{\rho})^{BD}_{inc,s}$	$(\frac{\mu}{\rho})_{coh}$	$(\frac{\mu}{\rho})_{\kappa_n}$	$(\frac{\mu}{\rho})_{\kappa_e}$	$(\frac{\mu}{\rho})_{\kappa,t}$	$(\frac{\mu}{\rho})_{\kappa,a}$	$(\frac{\mu}{\rho})_{\tau,t}$	$(\frac{\mu}{\rho})_{\tau,a}$	$(\frac{\mu}{\rho})_{tot,t}$	$(\frac{\mu}{\rho})_{tot,t-coh}$	$(\frac{\mu}{\rho})_{tot,a}$	$(\frac{\mu}{\rho})_{tot,en}$
.001	.194	.0121	.000377	.0000236	.194	.0121	3.34					4590.	4590.	4590.	4590.	4590.	4590.
.0015	.194	.0196	.000565	.0000570	.192	.0196	3.10					1440.	1440.	1440.	1440.	1440.	1440.
.002	.192	.0271	.000750	.000105	.192	.0270	2.85					639.	639.	642.	639.	639.	639.
.003	.192	.0416	.00111	.000240	.191	.0413	2.37					200.	200.	203.	200.	200.	200.
K .003607	.192	.0496	.00133	.000345	.191	.0493	2.13					119.	119.	121.	119.	119.	119.
.004	.191	.0547	.00148	.000420	.189	.0542	1.97					1320.	1180.	1330.	1320.	1320.	1180.
.005	.191	.0658	.00183	.000630	.189	.0651	1.65					989.	893.	990.	989.	989.	893.
.006	.189	.0750	.00217	.000859	.188	.0741	1.40					536.	494.	537.	536.	536.	494.
.008	.189	.0895	.00286	.00136	.186	.0881	1.07					325.	303.	326.	325.	325.	303.
.01	.188	.100	.00351	.00188	.183	.0983	.858					148.	141.	149.	148.	148.	141.
.015	.183	.116	.00508	.00328	.179	.115	.536					80.1	77.0	81.0	80.2	80.1	77.0
.02	.180	.130	.00653	.00470	.174	.125	.359					24.8	24.2	25.4	24.9	24.8	24.2
.03	.176	.141	.00910	.00735	.166	.134	.192					10.4	10.2	10.9	10.6	10.4	10.2
.04	.169	.145	.0113	.00967	.159	.135	.122					3.00	2.96	3.34	3.14	3.02	2.96
.05	.165	.146	.0133	.0118	.151	.134	.0841					1.21	1.20	1.48	1.36	1.22	1.21
.06	.160	.146	.0150	.0137	.145	.132	.0618					.607	.602	.836	.753	.621	.614
.08	.151	.142	.0177	.0166	.134	.126	.0368					.342	.340	.550	.487	.357	.354
.1	.144	.138	.0199	.0189	.124	.119	.0242					.142	.141	.320	.283	.160	.159
.15	.130	.127	.0236	.0229	.106	.104	.0113					.0708	.0705	.233	.208	.0907	.0895
.2	.119	.117	.0257	.0253	.0932	.0918	.00648					.0202	.0202	.159	.147	.0437	.0431
.3	.103	.103	.0279	.0277	.0756	.0748	.00294					.00827	.00825	.132	.125	.0340	.0336
.4	.0927	.0921	.0286	.0285	.0639	.0636	.00168					.00237	.00237	.108	.105	.0302	.0300
.5	.0845	.0842	.0288	.0288	.0557	.0554	.00109					.000993	.000992	.0947	.0930	.0296	.0294
.6	.0782	.0781	.0288	.0286	.0494	.0494	.000755					.000530	.000530	.0859	.0847	.0293	.0293
.8	.0687	.0685	.0282	.0277	.0407	.0408	.000428					.000323	.000323	.0792	.0784	.0291	.0290
1.	.0618	.0618	.0273	.0270	.0346	.0348	.000274					.000159	.000159	.0691	.0687	.0283	.0279
1.5	.0502	.0502	.0248	.0245	.0254	.0257	.000125	.000254		.000254	.0000808	.0000944	.0000944	.0621	.0619	.0274	.0271
2.	.0428	.0428	.0228	.0225	.0200	.0203	.0000705	.000996		.000996	.000484	.0000462	.0000462	.0507	.0505	.0251	.0246
3.	.0337	.0337	.0194	.0189	.0142	.0148	.0000314	.00279	.0000118	.00280	.00183	.0000280	.0000280	.0439	.0439	.0239	.0229
4.	.0282	.0282	.0171	.0165	.0111	.0117	.0000177	.00462	.0000485	.00467	.00343			.0365	.0365	.0222	.0208
5.	.0243	.0243	.0153	.0146	.00904	.00976		.00616	.0000947	.00625	.00490			.0328	.0328	.0217	.0199
6.	.0214	.0214	.0138	.0130	.00765	.00841		.00755	.000145	.00768	.00627			.0306	.0306	.0216	.0194
8.	.0176	.0176	.0117	.0109	.00585	.00667		.00962	.000248	.00987	.00839			.0291	.0291	.0216	.0192
10.	.0150	.0150	.0102	.00933	.00474	.00564		.0116	.000343	.0120	.0103			.0274	.0274	.0216	.0192
15.	.0111	.0111	.00787	.00687	.00322	.00420		.0149	.000536	.0154	.0133			.0270	.0270	.0222	.0197
20.	.00889	.00889	.00647	.00544	.00243	.00345		.0174	.000681	.0180	.0150			.0265	.0268	.0233	.0202
30.	.00647	.00647	.00484	.00376	.00163	.00271		.0211	.000909	.0220	.0172			.0270	.0270	.0245	.0205
40.	.00514	.00514	.00391	.00286	.00124	.00228		.0236	.00108	.0246	.0183			.0285	.0285	.0268	.0209
50.	.00430	.00430	.00331	.00225	.000989	.00205		.0254	.00119	.0266	.0186			.0297	.0297	.0285	.0213
60.	.00370	.00370	.00286	.00183	.000829	.00186		.0268	.00130	.0280	.0188			.0310	.0310	.0299	.0209
80.	.00291	.00291	.00229	.00128	.000624	.00163		.0288	.00145	.0302	.0188			.0317	.0317	.0310	.0206
100.	.00242	.00242	.00193	.000942	.000499	.00148		.0306	.00156	.0322	.0188			.0331	.0331	.0325	.0200
														.0346	.0346	.0342	.0197

20 CALCIUM
(barns/atom)

E (MeV)	KN $\sigma_{inc,t}$	BD $\sigma_{inc,t}$	KN $\sigma_{inc,a}$	BD $\sigma_{inc,a}$	KN $\sigma_{inc,s}$	BD $\sigma_{inc,s}$	σ_{coh}	$\sigma_{\gamma n}$	$\sigma_{\gamma e}$	$\sigma_{\gamma,t}$	$\sigma_{\gamma,a}$	$\sigma_{\gamma,t}$	$\sigma_{\gamma,a}$	$\sigma_{tot,t}$	$\sigma_{tot,t-coh}$	$\sigma_{tot,a}$	$\sigma_{tot,en}$
.001	13.3	.984	.0258	.00192	13.2	.982	239.					375000.	375000.	375000.	375000.	375000.	375000.
.0015	13.2	1.56	.0386	.00455	13.2	1.56	219.					118000.	118000.	118000.	118000.	118000.	118000.
.002	13.2	2.06	.0512	.00799	13.1	2.05	200.					52100.	52100.	52300.	52100.	52100.	52100.
.003	13.1	2.98	.0762	.0173	13.1	2.96	167.					16400.	16400.	16600.	16400.	16400.	16400.
.004	13.1	3.80	.101	.0292	13.0	3.77	140.					7250.	7250.	7390.	7250.	7250.	7250.
K .004037	13.1	3.83	.102	.0297	13.0	3.80	139.					7030.	7030.	7170.	7030.	7030.	7030.
.005	13.0	4.52	.125	.0433	12.9	4.48	118.					75800.	66300.	75900.	75800.	75800.	66300.
.006	13.0	5.14	.149	.0589	12.9	5.08	100.					42200.	37900.	42300.	42200.	42200.	37900.
.008	12.9	6.12	.195	.0927	12.7	6.03	76.3					25500.	23400.	25600.	25500.	25500.	23400.
.01	12.8	6.83	.240	.128	12.6	6.70	61.0					11500.	10800.	11600.	11500.	11500.	10800.
.015	12.6	8.05	.348	.223	12.2	7.83	38.7					6250.	5930.	6320.	6260.	6250.	5930.
.02	12.4	8.82	.446	.318	11.9	8.50	26.1					1950.	1880.	2000.	1960.	1950.	1880.
.03	11.9	9.59	.622	.499	11.3	9.09	14.0					837.	816.	872.	846.	837.	816.
.04	11.6	9.87	.772	.658	10.8	9.21	8.87					244.	240.	268.	254.	245.	240.
.05	11.2	9.94	.906	.802	10.3	9.14	6.15					99.7	98.4	118.	110.	100.	99.1
.06	10.9	9.91	1.02	.930	9.89	8.98	4.52					49.7	49.2	65.8	59.6	50.6	50.0
.08	10.3	9.69	1.21	1.13	9.13	8.56	2.70					28.3	28.1	42.7	38.2	29.3	29.0
.1	9.85	9.39	1.36	1.30	8.50	8.09	1.78					11.5	11.4	23.9	21.2	12.7	12.5
.15	8.87	8.64	1.61	1.57	7.26	7.07	.827					5.82	5.79	17.0	15.2	7.18	7.00
.2	8.13	7.99	1.76	1.73	6.37	6.26	.476					1.66	1.65	11.1	10.3	3.27	3.22
.3	7.07	7.00	1.91	1.89	5.16	5.11	.217					.686	.684	9.15	8.68	2.45	2.41
.4	6.33	6.30	1.96	1.95	4.37	4.35	.123					.196	.196	7.41	7.20	2.11	2.09
.5	5.78	5.76	1.97	1.97	3.81	3.79	.0799					.0840	.0839	6.51	6.38	2.04	2.03
.6	5.35	5.33	1.97	1.96	3.38	3.37	.0558					.0451	.0451	5.88	5.81	2.02	2.02
.8	4.70	4.69	1.92	1.90	2.78	2.79	.0316					.0277	.0277	5.41	5.36	2.00	1.99
1.	4.22	4.22	1.86	1.84	2.37	2.38	.0203					.0135	.0135	4.74	4.70	1.93	1.91
1.5	3.43	3.43	1.70	1.68	1.73	1.75	.00925	.0182		.0182	.00579	.00810	.00810	4.25	4.23	1.87	1.85
2.	2.93	2.93	1.55	1.54	1.37	1.39	.00522	.0720		.0720	.0349	.00402	.00402	3.46	3.45	1.72	1.69
3.	2.30	2.30	1.33	1.29	.973	1.01	.00232	.200	.000806	.201	.132	.00244	.00244	3.01	3.00	1.62	1.58
4.	1.92	1.92	1.17	1.12	.756	.803	.00131	.332	.00331	.335	.246	.00121	.00121	2.50	2.50	1.53	1.52
5.	1.66	1.66	1.04	.993	.618	.667		.441	.00650	.447	.349			2.26	2.25	1.51	1.37
6.	1.47	1.47	.946	.888	.523	.582		.540	.00993	.550	.447			2.11	2.11	1.49	1.36
8.	1.20	1.20	.801	.742	.400	.458		.692	.0170	.709	.601			2.02	2.02	1.50	1.34
10.	1.02	1.02	.699	.632	.324	.388		.835	.0235	.858	.737			1.91	1.91	1.51	1.34
15.	.757	.757	.538	.469	.220	.288		1.08	.0366	1.12	.952			1.88	1.88	1.56	1.37
20.	.608	.608	.442	.370	.166	.238		1.26	.0466	1.31	1.08			1.88	1.88	1.44	1.42
30.	.442	.442	.331	.254	.112	.188		1.51	.0622	1.57	1.22			1.92	1.92	1.75	1.45
40.	.352	.352	.267	.192	.0844	.160		1.69	.0737	1.76	1.30			2.01	2.01	1.90	1.47
50.	.294	.294	.226	.147	.0676	.147		1.83	.0814	1.91	1.32			2.11	2.11	2.03	1.49
60.	.253	.253	.196	.117	.0566	.136		1.93	.0882	2.02	1.33			2.20	2.20	2.14	1.47
80.	.199	.199	.157	.0796	.0426	.119		2.07	.0984	2.17	1.33			2.27	2.27	2.22	1.45
100.	.166	.166	.131	.0563	.0341	.110		2.20	.106	2.31	1.32			2.37	2.37	2.33	1.41
														2.48	2.48	2.44	1.38

20 CALCIUM

(cm^2/g = 0.01503 x barns/atom)

E (MeV)	$(\frac{\mu}{\rho})^{KN}_{inc,t}$	$(\frac{\mu}{\rho})^{BD}_{inc,t}$	$(\frac{\mu}{\rho})^{KN}_{inc,a}$	$(\frac{\mu}{\rho})^{BD}_{inc,a}$	$(\frac{\mu}{\rho})^{KN}_{inc,s}$	$(\frac{\mu}{\rho})^{BD}_{inc,s}$	$(\frac{\mu}{\rho})_{coh}$	$(\frac{\mu}{\rho})_{\kappa n}$	$(\frac{\mu}{\rho})_{\kappa e}$	$(\frac{\mu}{\rho})_{\kappa,t}$	$(\frac{\mu}{\rho})_{\kappa,a}$	$(\frac{\mu}{\rho})_{\tau,t}$	$(\frac{\mu}{\rho})_{\tau,a}$	$(\frac{\mu}{\rho})_{tot,t}$	$(\frac{\mu}{\rho})_{tot,t-coh}$	$(\frac{\mu}{\rho})_{tot,a}$	$(\frac{\mu}{\rho})_{tot,en}$
.001	.200	.0148	.000388	.0000289	.198	.0148	3.59					5640.	5640.	5640.	5640.	5640.	5640.
.0015	.198	.0234	.000580	.0000684	.198	.0234	3.29					1770.	1770.	1770.	1770.	1770.	1770.
.002	.198	.0310	.000770	.000120	.197	.0308	3.01					783.	783.	786.	783.	783.	783.
.003	.197	.0448	.00115	.000260	.197	.0445	2.51					246.	246.	249.	246.	246.	246.
.004	.197	.0571	.00152	.000439	.195	.0567	2.10					109.	109.	111.	109.	109.	109.
K .004037	.197	.0576	.00153	.000446	.195	.0571	2.09					106.	106.	108.	106.	106.	106.
.005	.195	.0679	.00188	.000651	.194	.0673	1.77					1140.	996.	1140.	1140.	1140.	996.
.006	.195	.0773	.00224	.000885	.194	.0764	1.50					634.	570.	636.	634.	634.	570.
.008	.194	.0920	.00293	.00139	.191	.0906	1.15					383.	352.	385.	383.	383.	352.
.01	.192	.103	.00361	.00192	.189	.101	.917					173.	162.	174.	173.	173.	162.
.015	.189	.121	.00523	.00335	.183	.118	.582					93.9	89.1	95.0	94.1	93.9	89.1
.02	.186	.133	.00670	.00478	.179	.128	.392					29.3	28.3	30.1	29.5	29.3	28.3
.03	.179	.144	.00935	.00750	.170	.137	.210					12.6	12.3	13.1	12.7	12.6	12.3
.04	.174	.148	.0116	.00989	.162	.138	.133					3.67	3.61	4.03	3.82	3.68	3.61
.05	.168	.149	.0136	.0121	.155	.137	.0924					1.50	1.48	1.77	1.65	1.59	1.49
.06	.164	.149	.0153	.0140	.149	.135	.0679					.747	.739	.989	.896	.761	.751
.08	.155	.146	.0182	.0170	.137	.129	.0406					.425	.422	.642	.574	.440	.436
.1	.148	.141	.0204	.0195	.128	.122	.0268					.173	.171	.359	.319	.191	.188
.15	.133	.130	.0242	.0236	.109	.106	.0124					.0875	.0870	.256	.228	.108	.107
.2	.122	.120	.0268	.0260	.0957	.0941	.00715					.0249	.0248	.167	.155	.0491	.0484
.3	.106	.105	.0287	.0284	.0776	.0768	.00326					.0103	.0103	.138	.130	.0368	.0362
.4	.0951	.0947	.0295	.0293	.0657	.0654	.00185					.00295	.00295	.111	.108	.0317	.0314
.5	.0869	.0866	.0296	.0296	.0573	.0570	.00120					.00126	.00126	.0978	.0959	.0307	.0305
.6	.0804	.0801	.0296	.0295	.0508	.0507	.000839					.000678	.000678	.0884	.0873	.0304	.0304
.8	.0706	.0705	.0289	.0286	.0418	.0419	.000475					.000416	.000416	.0813	.0806	.0301	.0299
1.	.0634	.0634	.0280	.0277	.0356	.0358	.000305					.000203	.000203	.0712	.0706	.0290	.0287
1.5	.0516	.0516	.0256	.0253	.0260	.0263	.000139	.000274		.000274	.0000870	.000122	.000122	.0639	.0636	.0281	.0278
2.	.0440	.0440	.0233	.0231	.0206	.0209	.0000785	.00108		.00108	.000525	.0000604	.0000604	.0520	.0519	.0259	.0254
3.	.0346	.0346	.0200	.0194	.0146	.0152	.0000349	.00301	.0000121	.00302	.00198	.0000367	.0000367	.0452	.0451	.0243	.0237
4.	.0289	.0289	.0176	.0168	.0114	.0121	.0000197	.00499	.0000497	.00504	.00370	.0000182	.0000182	.0376	.0376	.0230	.0213
5.	.0249	.0249	.0156	.0149	.00929	.0100		.00663	.0000977	.00672	.00525			.0340	.0338	.0227	.0206
6.	.0221	.0221	.0142	.0133	.00786	.00875		.00812	.000149	.00827	.00672			.0317	.0317	.0224	.0201
8.	.0180	.0180	.0120	.0112	.00601	.00688		.0104	.000256	.0107	.00903			.0304	.0304	.0225	.0201
10.	.0153	.0153	.0105	.00950	.00487	.00583		.0126	.000353	.0129	.0111			.0287	.0287	.0227	.0201
15.	.0114	.0114	.00809	.00705	.00331	.00433		.0162	.000550	.0168	.0143			.0283	.0283	.0234	.0206
20.	.00914	.00914	.00664	.00556	.00249	.00358		.0189	.000700	.0197	.0162			.0283	.0283	.0249	.0213
30.	.00664	.00664	.00497	.00382	.00168	.00283		.0227	.000935	.0236	.0183			.0289	.0289	.0263	.0218
40.	.00529	.00529	.00401	.00289	.00127	.00248		.0254	.00111	.0265	.0195			.0302	.0302	.0286	.0221
50.	.00442	.00442	.00340	.00221	.00102	.00221		.0275	.00122	.0287	.0198			.0317	.0317	.0305	.0224
60.	.00380	.00380	.00295	.00176	.000851	.00204		.0290	.00133	.0304	.0200			.0331	.0331	.0322	.0221
80.	.00299	.00299	.00236	.00120	.000640	.00179		.0311	.00148	.0326	.0200			.0341	.0341	.0334	.0218
100.	.00249	.00249	.00197	.000846	.000513	.00165		.0331	.00159	.0347	.0198			.0356	.0356	.0350	.0212
														.0373	.0373	.0367	.0207

21 SCANDIUM
(barns/atom)

E (MeV)	KN $\sigma_{inc,t}$	BD $\sigma_{inc,t}$	KN $\sigma_{inc,a}$	BD $\sigma_{inc,a}$	KN $\sigma_{inc,s}$	BD $\sigma_{inc,s}$	σ_{coh}	σ_{x_n}	σ_{x_e}	$\sigma_{x,t}$	$\sigma_{x,a}$	$\sigma_{\gamma,t}$	$\sigma_{\gamma,a}$	$\sigma_{tot,t}$	$\sigma_{tot,t-coh}$	$\sigma_{tot,a}$	$\sigma_{tot,en}$
.001	13.9	.922	.0271	.00180	13.9	.920	265.					463000.	463000.	463000.	463000.	463000.	463000.
.0015	13.9	1.52	.0405	.00443	13.8	1.52	244.					145000.	145000.	145000.	145000.	145000.	145000.
.002	13.9	2.05	.0538	.00795	13.8	2.04	224.					64400.	64400.	64400.	64400.	64400.	64400.
.003	13.8	2.99	.0800	.0173	13.7	2.97	187.					20300.	20300.	20500.	20300.	20300.	20300.
.004	13.8	3.84	.106	.0295	13.6	3.81	157.					8960.	6430.	9120.	8960.	8960.	8960.
K .004491	13.7	4.21	.118	.0363	13.6	4.17	144.					6430.	6430.	6580.	6430.	6430.	6430.
.005	13.7	4.58	.131	.0439	13.6	4.54	132.					67400.	57700.	67500.	67400.	67400.	57700.
.006	13.6	5.23	.156	.0599	13.5	5.17	112.					50400.	43900.	50500.	50400.	50400.	43900.
.008	13.5	6.27	.205	.0949	13.3	6.18	85.0					30600.	27300.	30700.	30600.	30600.	27300.
.01	13.4	7.05	.252	.132	13.2	6.92	67.7					13700.	12600.	13800.	13700.	13700.	12600.
.015	13.2	8.35	.365	.231	12.8	8.12	43.0					7400.	6920.	7470.	7410.	7400.	6920.
.02	13.0	9.17	.468	.331	12.5	8.84	29.2					2370.	2270.	2420.	2380.	2370.	2270.
.03	12.5	10.0	.653	.520	11.9	9.48	15.8					1010.	977.	1050.	1020.	1010.	977.
.04	12.2	10.3	.811	.687	11.3	9.61	9.95					302.	296.	328.	312.	303.	297.
.05	11.8	10.4	.951	.839	10.8	9.56	6.91					123.	121.	143.	133.	124.	122.
.06	11.5	10.4	1.07	.976	10.4	9.42	5.08					61.5	60.7	78.8	71.9	62.5	61.5
.08	10.9	10.1	1.27	1.18	9.59	8.92	3.04					35.0	34.6	50.5	45.4	36.1	35.6
.1	10.3	9.84	1.43	1.36	8.92	8.48	2.00					14.5	14.4	27.6	24.6	15.8	15.6
.15	9.32	9.06	1.69	1.64	7.63	7.42	.932					7.30	7.25	19.1	17.1	8.73	8.61
.2	8.53	8.38	1.85	1.81	6.69	6.57	.537					2.09	2.08	12.1	11.1	3.78	3.72
.3	7.42	7.35	2.00	1.98	5.42	5.37	.244					.860	.857	9.78	9.24	2.71	2.67
.4	6.65	6.61	2.06	2.05	4.59	4.56	.139					.247	.246	7.84	7.60	2.25	2.23
.5	6.07	6.04	2.07	2.07	4.00	3.97	.0901					.107	.107	6.86	6.72	2.17	2.16
.6	5.62	5.60	2.06	2.06	3.55	3.54	.0633					.0578	.0577	6.19	6.10	2.13	2.13
.8	4.93	4.92	2.02	1.99	2.92	2.93	.0359					.0357	.0357	5.70	5.64	2.10	2.10
1.	4.44	4.43	1.95	1.93	2.48	2.50	.0230					.0175	.0175	4.97	4.94	2.04	2.01
1.5	3.60	3.60	1.78	1.76	1.82	1.84	.0104	.0202		.0202	.00634	.0105	.0105	4.46	4.44	1.96	1.94
2.	3.07	3.07	1.63	1.61	1.44	1.46	.00590	.0791		.0791	.0380	.00510	.00510	3.84	3.83	1.81	1.77
3.	2.42	2.42	1.39	1.36	1.02	1.06	.00261	.221	.000849	.222	.144	.00319	.00319	3.16	3.15	1.71	1.65
4.	2.02	2.02	1.23	1.18	.794	.844	.00148	.369	.00347	.372	.271	.00162	.00162	2.65	2.64	1.61	1.51
5.	1.74	1.74	1.10	1.04	.649	.701		.489	.00681	.496	.383	.00105	.00105	2.39	2.39	1.60	1.45
6.	1.54	1.54	.993	.927	.549	.613		.596	.0105	.606	.488			2.24	2.24	1.60	1.42
8.	1.26	1.26	.841	.775	.420	.485		.760	.0178	.778	.650			2.15	2.15	1.60	1.41
10.	1.07	1.07	.734	.659	.340	.411		.920	.0246	.945	.800			2.04	2.04	1.62	1.42
15.	.795	.795	.564	.490	.231	.305		1.19	.0385	1.23	1.03			2.02	2.02	1.68	1.46
20.	.638	.638	.464	.386	.175	.252		1.38	.0489	1.43	1.16			2.02	2.02	1.79	1.52
30.	.465	.465	.347	.263	.117	.202		1.67	.0651	1.74	1.32			2.07	2.07	1.89	1.55
40.	.369	.369	.281	.196	.0886	.173		1.85	.0773	1.93	1.39			2.20	2.20	2.09	1.58
50.	.308	.308	.237	.148	.0710	.160		2.00	.0852	2.09	1.41			2.30	2.30	2.21	1.59
60.	.265	.265	.206	.117	.0594	.148		2.12	.0928	2.21	1.42			2.40	2.40	2.33	1.56
80.	.209	.209	.165	.0784	.0447	.131		2.29	.103	2.39	1.44			2.47	2.47	2.42	1.54
100.	.174	.174	.138	.0580	.0358	.118		2.42	.111	2.53	1.42			2.60	2.60	2.55	1.52
														2.70	2.70	2.67	1.48

21 SCANDIUM
(cm²/g = 0.01340 x barns/atom)

E (MeV)	$(\frac{\mu}{\rho})^{KN}_{inc,t}$	$(\frac{\mu}{\rho})^{BD}_{inc,t}$	$(\frac{\mu}{\rho})^{KN}_{inc,a}$	$(\frac{\mu}{\rho})^{BD}_{inc,a}$	$(\frac{\mu}{\rho})^{KN}_{inc,s}$	$(\frac{\mu}{\rho})^{BD}_{inc,s}$	$(\frac{\mu}{\rho})_{coh}$	$(\frac{\mu}{\rho})_{\kappa n}$	$(\frac{\mu}{\rho})_{\kappa e}$	$(\frac{\mu}{\rho})_{\kappa,t}$	$(\frac{\mu}{\rho})_{\kappa,a}$	$(\frac{\mu}{\rho})_{\tau,t}$	$(\frac{\mu}{\rho})_{\tau,a}$	$(\frac{\mu}{\rho})_{tot,t}$	$(\frac{\mu}{\rho})_{tot,t-coh}$	$(\frac{\mu}{\rho})_{tot,a}$	$(\frac{\mu}{\rho})_{tot,en}$
.001	.186	.0124	.000363	.0000241	.186	.0123	3.55					6200.	6200.	6200.	6200.	6200.	6200.
.0015	.186	.0204	.000543	.0000594	.185	.0204	3.27					1940.	1940.	1940.	1940.	1940.	1940.
.002	.186	.0275	.000721	.000107	.185	.0273	3.00					863.	863.	866.	863.	863.	863.
.003	.185	.0401	.00107	.000232	.184	.0398	2.51					272.	272.	275.	272.	272.	272.
.004	.185	.0515	.00142	.000395	.182	.0511	2.10					120.	120.	122.	120.	120.	120.
K .004491	.184	.0564	.00158	.000486	.182	.0559	1.93					86.2	86.2	88.2	86.2	86.2	86.2
.005	.184	.0614	.00176	.000588	.182	.0608	1.77					903.	773.	905.	903.	903.	773.
.006	.182	.0701	.00209	.000803	.181	.0693	1.50					675.	588.	677.	675.	675.	588.
.008	.181	.0840	.00275	.00127	.178	.0828	1.14					410.	366.	411.	410.	410.	366.
.01	.180	.0945	.00338	.00177	.177	.0927	.907					184.	169.	185.	184.	184.	169.
.015	.177	.112	.00489	.00310	.172	.109	.576					99.2	92.7	100.	99.3	99.2	92.7
.02	.176	.123	.00627	.00444	.167	.118	.391					31.8	30.4	32.4	31.9	31.8	30.4
.03	.167	.134	.00875	.00697	.159	.127	.212					13.5	13.1	14.1	13.7	13.5	13.1
.04	.163	.138	.0109	.00921	.151	.129	.133					4.05	3.97	4.40	4.18	4.06	3.98
.05	.158	.139	.0127	.0112	.145	.128	.0926					1.65	1.62	1.92	1.78	1.66	1.63
.06	.154	.139	.0143	.0131	.139	.126	.0681					.824	.813	1.06	.963	.837	.824
.08	.146	.135	.0170	.0158	.129	.120	.0407					.469	.464	.677	.608	.484	.477
.1	.138	.132	.0192	.0182	.120	.114	.0268					.194	.193	.370	.330	.212	.209
.15	.125	.121	.0226	.0220	.102	.0994	.0125					.0978	.0972	.256	.229	.117	.115
.2	.114	.112	.0248	.0243	.0896	.0880	.00720					.0280	.0279	.162	.149	.0507	.0498
.3	.0994	.0985	.0268	.0265	.0726	.0720	.00327					.0115	.0115	.131	.124	.0363	.0358
.4	.0891	.0886	.0276	.0275	.0615	.0611	.00186					.00331	.00330	.105	.102	.0302	.0299
.5	.0813	.0809	.0277	.0277	.0536	.0532	.00121					.00143	.00143	.0919	.0900	.0291	.0289
.6	.0753	.0750	.0276	.0276	.0476	.0474	.000848					.000775	.000773	.0829	.0817	.0285	.0285
.8	.0661	.0659	.0271	.0267	.0391	.0393	.000481					.000478	.000478	.0764	.0756	.0281	.0281
1.	.0595	.0594	.0261	.0259	.0332	.0335	.000308					.000234	.000234	.0666	.0662	.0273	.0269
1.5	.0482	.0482	.0239	.0236	.0244	.0247	.000139	.000271		.000271	.0000852	.000141	.000141	.0596	.0595	.0263	.0260
2.	.0411	.0411	.0218	.0216	.0193	.0196	.0000791	.00106		.00106	.000509	.0000683	.0000683	.0488	.0486	.0243	.0237
3.	.0324	.0324	.0186	.0182	.0137	.0142	.0000350	.00296	.0000114	.00297	.00193	.0000427	.0000427	.0423	.0422	.0229	.0221
4.	.0271	.0271	.0165	.0158	.0106	.0113	.0000198	.00494	.0000465	.00498	.00363	.0000217	.0000217	.0355	.0354	.0216	.0202
5.	.0233	.0233	.0147	.0139	.00870	.00939		.00655	.0000913	.00665	.00513	.0000141	.0000141	.0320	.0320	.0214	.0194
6.	.0206	.0206	.0133	.0124	.00736	.00821		.00799	.000141	.00812	.00654			.0300	.0300	.0214	.0190
8.	.0169	.0169	.0113	.0104	.00563	.00650		.0102	.000239	.0104	.00871			.0288	.0288	.0214	.0189
10.	.0143	.0143	.00984	.00883	.00456	.00551		.0123	.000330	.0127	.0107			.0273	.0273	.0217	.0190
15.	.0107	.0107	.00756	.00657	.00310	.00409		.0159	.000516	.0165	.0138			.0271	.0271	.0228	.0196
20.	.00855	.00855	.00622	.00517	.00234	.00338		.0185	.000655	.0192	.0155			.0271	.0271	.0240	.0204
30.	.00623	.00623	.00465	.00352	.00157	.00271		.0224	.000872	.0233	.0177			.0277	.0277	.0253	.0208
40.	.00494	.00494	.00377	.00263	.00119	.00232		.0248	.00104	.0259	.0186			.0295	.0295	.0280	.0212
50.	.00413	.00413	.00318	.00198	.000951	.00214		.0268	.00114	.0280	.0189			.0308	.0308	.0296	.0213
60.	.00355	.00355	.00276	.00157	.000796	.00198		.0284	.00124	.0296	.0190			.0322	.0322	.0312	.0209
80.	.00280	.00280	.00221	.00105	.000599	.00176		.0307	.00138	.0320	.0193			.0331	.0331	.0324	.0206
100.	.00233	.00233	.00185	.000750	.000480	.00158		.0324	.00149	.0339	.0190			.0348	.0348	.0342	.0204
														.0362	.0362	.0358	.0198

22 TITANIUM
(barns/atom)

E (MeV)	KN $\sigma_{inc,t}$	BD $\sigma_{inc,t}$	KN $\sigma_{inc,a}$	BD $\sigma_{inc,a}$	KN $\sigma_{inc,s}$	BD $\sigma_{inc,s}$	σ_{coh}	σ_{κ_n}	σ_{κ_e}	$\sigma_{\kappa,t}$	$\sigma_{\kappa,a}$	$\sigma_{\gamma,t}$	$\sigma_{\gamma,a}$	$\sigma_{tot,t}$	$\sigma_{tot,t-coh}$	$\sigma_{tot,a}$	$\sigma_{tot,en}$
.001	14.6	.852	.0284	.00166	14.5	.850	293.					562000.	562000.	562000.	562000.	562000.	562000.
.0015	14.5	1.42	.0424	.00414	14.5	1.42	272.					177000.	177000.	177000.	177000.	177000.	177000.
.002	14.5	1.95	.0563	.00757	14.5	1.94	249.					78700.	78700.	79000.	78700.	78700.	78700.
.003	14.5	2.93	.0838	.0170	14.4	2.91	209.					24800.	24800.	25000.	24800.	24800.	24800.
.004	14.4	3.81	.111	.0293	14.3	3.78	176.					10800.	10800.	11000.	10800.	10800.	10800.
E .004966	14.4	4.57	.137	.0435	14.2	4.53	149.					5910.	5910.	6060.	5910.	5910.	5910.
												60400.	50500.	60600.	60400.	60400.	60500.
.005	14.4	4.60	.137	.0441	14.2	4.56	148.					59000.	49400.	59200.	59000.	59000.	49400.
.006	14.3	5.28	.164	.0605	14.1	5.22	126.					35800.	30900.	35900.	35800.	35800.	30900.
.008	14.2	6.40	.215	.0969	14.0	6.30	94.9					16200.	14400.	16300.	16200.	16200.	14400.
.01	14.1	7.25	.264	.136	13.8	7.11	75.1					8750.	8040.	8830.	8760.	8750.	8040.
.015	13.8	8.64	.383	.239	13.5	8.40	47.6					2820.	2670.	2880.	2830.	2820.	2670.
.02	13.6	9.52	.490	.344	13.1	9.18	32.6					1210.	1160.	1250.	1220.	1210.	1160.
.03	13.1	10.4	.684	.541	12.5	9.86	17.6					367.	357.	395.	377.	368.	358.
.04	12.7	10.7	.849	.714	11.9	9.99	11.1					151.	148.	173.	162.	152.	149.
.05	12.4	10.8	.997	.871	11.4	9.93	7.72					75.7	74.5	94.2	86.5	76.7	75.4
.06	12.0	10.8	1.13	1.01	10.9	9.79	5.69					43.2	42.6	59.7	54.0	44.3	43.6
.08	11.4	10.6	1.33	1.24	10.0	9.36	3.41					17.8	17.6	31.8	28.4	19.1	18.8
.1	10.8	10.3	1.50	1.42	9.35	8.88	2.24					9.00	8.93	21.5	19.3	10.5	10.3
.15	9.76	9.48	1.77	1.72	7.99	7.76	1.05					2.58	2.57	13.1	12.1	4.35	4.29
.2	8.94	8.77	1.93	1.90	7.01	6.87	.602					1.06	1.06	10.4	9.83	2.99	2.96
.3	7.77	7.70	2.10	2.08	5.68	5.62	.274					.308	.307	8.28	8.01	2.41	2.39
.4	6.97	6.92	2.16	2.15	4.81	4.77	.156					.133	.133	7.21	7.05	2.29	2.28
.5	6.36	6.33	2.17	2.16	4.19	4.17	.101					.0725	.0724	6.50	6.40	2.24	2.23
.6	5.88	5.86	2.16	2.15	3.72	3.71	.0710					.0452	.0451	5.98	5.91	2.21	2.20
.8	5.17	5.16	2.11	2.09	3.06	3.07	.0403					.0223	.0223	5.22	5.18	2.13	2.11
1.	4.65	4.64	2.04	2.02	2.60	2.62	.0259					.0135	.0135	4.68	4.65	2.05	2.03
1.5	3.78	3.77	1.87	1.84	1.91	1.93	.0117	.0223		.0223	.00702	.00645	.00645	3.81	3.80	1.90	1.85
2.	3.22	3.22	1.71	1.68	1.51	1.54	.00662	.0870		.0870	.0418	.00405	.00405	3.32	3.31	1.80	1.73
3.	2.53	2.53	1.46	1.42	1.07	1.11	.00295	.243	.000890	.244	.158	.00208	.00208	2.78	2.78	1.71	1.58
4.	2.12	2.12	1.28	1.23	.832	.888	.00166	.404	.00364	.408	.296	.00135	.00135	2.53	2.53	1.69	1.53
5.	1.83	1.83	1.15	1.09	.680	.743	.00107	.535	.00713	.542	.418	.00100	.00100	2.37	2.37	1.69	1.51
6.	1.62	1.62	1.04	.974	.575	.646		.652	.0110	.663	.532			2.28	2.28	1.78	1.51
8.	1.32	1.32	.882	.808	.440	.512		.835	.0187	.854	.712			2.17	2.17	1.74	1.52
10.	1.13	1.13	.769	.692	.356	.438		1.01	.0258	1.04	.874			2.17	2.17	1.81	1.57
15.	.833	.833	.591	.511	.242	.322		1.30	.0404	1.34	1.13			2.17	2.17	1.93	1.64
20.	.669	.669	.486	.403	.183	.266		1.52	.0512	1.57	1.27			2.24	2.24	2.06	1.67
30.	.487	.487	.364	.273	.123	.214		1.82	.0683	1.89	1.43			2.38	2.38	2.25	1.70
40.	.387	.387	.294	.201	.0928	.186		2.04	.0810	2.12	1.51			2.51	2.51	2.41	1.71
50.	.323	.323	.249	.150	.0744	.173		2.20	.0892	2.29	1.54			2.61	2.61	2.54	1.69
60.	.278	.278	.216	.118	.0622	.160		2.32	.0970	2.42	1.54			2.70	2.70	2.64	1.66
80.	.219	.219	.173	.0788	.0468	.140		2.50	.108	2.61	1.55			2.83	2.83	2.78	1.63
100.	.182	.182	.145	.0566	.0376	.125		2.64	.116	2.76	1.52			2.94	2.94	2.91	1.58

22 TITANIUM

(cm^2/g = 0.01257 x barns/atom)

E (MeV)	$(\frac{\mu}{\rho})^{KN}_{inc,t}$	$(\frac{\mu}{\rho})^{BD}_{inc,t}$	$(\frac{\mu}{\rho})^{KN}_{inc,a}$	$(\frac{\mu}{\rho})^{BD}_{inc,a}$	$(\frac{\mu}{\rho})^{KN}_{inc,s}$	$(\frac{\mu}{\rho})^{BD}_{inc,s}$	$(\frac{\mu}{\rho})_{coh}$	$(\frac{\mu}{\rho})_{\kappa n}$	$(\frac{\mu}{\rho})_{\kappa e}$	$(\frac{\mu}{\rho})_{\kappa,t}$	$(\frac{\mu}{\rho})_{\kappa,a}$	$(\frac{\mu}{\rho})_{\tau,t}$	$(\frac{\mu}{\rho})_{\tau,a}$	$(\frac{\mu}{\rho})_{tot,t}$	$(\frac{\mu}{\rho})_{tot,t-coh}$	$(\frac{\mu}{\rho})_{tot,a}$	$(\frac{\mu}{\rho})_{tot,en}$
.001	.184	.0107	.000357	.0000209	.182	.0107	3.68					7060.	7060.	7060.	7060.	7060.	7060.
.0015	.182	.0178	.000533	.0000520	.182	.0178	3.42					2220.	2220.	2220.	2220.	2220.	2220.
.002	.182	.0245	.000708	.0000952	.182	.0244	3.13					989.	989.	993.	989.	989.	989.
.003	.182	.0368	.00105	.000214	.181	.0366	2.63					312.	312.	314.	312.	312.	312.
.004	.181	.0479	.00140	.000368	.180	.0475	2.21					136.	136.	138.	136.	136.	136.
K .004966	.181	.0574	.00172	.000547	.178	.0569	1.87					74.3	74.3	76.2	74.3	74.3	74.3
.005	.181	.0578	.00172	.000554	.178	.0573	1.86					759.	635.	762.	759.	759.	635.
.006	.180	.0664	.00206	.000760	.177	.0656	1.58					742.	621.	744.	742.	742.	621.
.008	.178	.0804	.00270	.00122	.176	.0792	1.19					450.	388.	451.	450.	450.	388.
.01	.177	.0911	.00332	.00171	.173	.0894	.944					204.	184.	205.	204.	204.	184.
.015	.173	.109	.00481	.00300	.170	.106	.598					110.	101.	111.	110.	110.	101.
.02	.171	.120	.00616	.00432	.165	.115	.410					35.4	33.6	36.2	35.6	35.4	33.6
.03	.165	.131	.00860	.00680	.157	.124	.221					15.2	14.6	15.7	15.3	15.2	14.6
.04	.160	.134	.0107	.00897	.150	.126	.140					4.61	4.49	4.97	4.74	4.63	4.50
.05	.156	.136	.0125	.0109	.143	.125	.0970					1.90	1.86	2.17	2.04	1.91	1.87
.06	.151	.136	.0142	.0127	.137	.123	.0715					.952	.936	1.18	1.09	.964	.948
.08	.143	.133	.0167	.0156	.126	.118	.0429					.543	.535	.750	.679	.557	.548
.1	.136	.129	.0189	.0178	.118	.112	.0282					.224	.221	.400	.357	.240	.236
.15	.123	.119	.0222	.0216	.100	.0975	.0132					.113	.112	.270	.243	.132	.129
.2	.112	.110	.0243	.0239	.0881	.0864	.00757					.0324	.0323	.165	.152	.0547	.0539
.3	.0977	.0968	.0264	.0261	.0714	.0706	.00344					.0133	.0133	.131	.124	.0376	.0372
.4	.0876	.0870	.0272	.0270	.0605	.0600	.00196					.00387	.00386	.104	.101	.0303	.0300
.5	.0799	.0796	.0273	.0272	.0527	.0524	.00127					.00167	.00167	.0906	.0886	.0288	.0287
.6	.0739	.0737	.0272	.0270	.0468	.0466	.000892					.000911	.000910	.0817	.0804	.0282	.0280
.8	.0650	.0649	.0265	.0263	.0385	.0386	.000507					.000568	.000567	.0752	.0743	.0278	.0277
1.	.0585	.0583	.0256	.0254	.0327	.0329	.000326					.000280	.000280	.0656	.0651	.0268	.0265
1.5	.0475	.0474	.0235	.0231	.0240	.0243	.000147	.000280		.000280	.0000882	.000170	.000170	.0588	.0585	.0258	.0255
2.	.0405	.0405	.0215	.0211	.0190	.0194	.0000832	.00109		.00109	.000525	.0000811	.0000811	.0479	.0478	.0239	.0233
3.	.0318	.0318	.0184	.0178	.0134	.0140	.0000371	.00305	.0000112	.00307	.00199	.0000509	.0000509	.0417	.0416	.0226	.0217
4.	.0266	.0266	.0161	.0155	.0105	.0112	.0000209	.00508	.0000458	.00513	.00372	.0000261	.0000261	.0349	.0349	.0215	.0199
5.	.0230	.0230	.0145	.0137	.00855	.00934	.0000134	.00672	.0000896	.00681	.00525	.0000170	.0000170	.0318	.0318	.0212	.0192
6.	.0204	.0204	.0131	.0122	.00723	.00812		.00820	.000138	.00833	.00669	.0000126	.0000126	.0298	.0298	.0212	.0190
8.	.0166	.0166	.0111	.0102	.00553	.00644		.0105	.000235	.0107	.00895			.0287	.0287	.0214	.0190
10.	.0142	.0142	.00967	.00870	.00447	.00551		.0127	.000324	.0131	.0110			.0273	.0273	.0219	.0191
15.	.0105	.0105	.00763	.00642	.00304	.00405		.0163	.000508	.0168	.0142			.0273	.0273	.0228	.0197
20.	.00841	.00841	.00611	.00507	.00230	.00334		.0191	.000644	.0197	.0160			.0282	.0282	.0243	.0206
30.	.00612	.00612	.00458	.00343	.00155	.00269		.0229	.000859	.0238	.0180			.0299	.0299	.0259	.0210
40.	.00486	.00486	.00370	.00253	.00117	.00234		.0256	.00102	.0266	.0190			.0316	.0316	.0283	.0214
50.	.00406	.00406	.00313	.00189	.000935	.00217		.0277	.00112	.0288	.0194			.0328	.0328	.0303	.0215
60.	.00349	.00349	.00272	.00148	.000782	.00201		.0292	.00122	.0304	.0194			.0339	.0339	.0319	.0212
80.	.00275	.00275	.00217	.000991	.000588	.00176		.0314	.00136	.0328	.0195			.0356	.0356	.0332	.0209
100.	.00229	.00229	.00182	.000711	.000473	.00157		.0332	.00146	.0347	.0191			.0370	.0370	.0349	.0205
																.0366	.0199

23 VANADIUM
(barns/atom)

E (MeV)	KN $\sigma_{inc,t}$	BD $\sigma_{inc,t}$	KN $\sigma_{inc,a}$	BD $\sigma_{inc,a}$	KN $\sigma_{inc,s}$	BD $\sigma_{inc,s}$	σ_{coh}	$\sigma_{n,n}$	$\sigma_{n,e}$	$\sigma_{n,t}$	$\sigma_{n,a}$	$\sigma_{\gamma,t}$	$\sigma_{\gamma,a}$	$\sigma_{tot,t}$	$\sigma_{tot,t-coh}$	$\sigma_{tot,a}$	$\sigma_{tot,en}$
.001	15.2	.761	.0297	.00148	15.2	.760	323.					675000.	675000.	675000.	675000.	675000.	675000.
.0015	15.2	1.30	.0444	.00379	15.2	1.30	300.					212000.	212000.	212000.	212000.	212000.	212000.
.002	15.2	1.83	.0589	.00710	15.1	1.82	277.					94100.	94100.	94400.	94100.	94100.	94100.
.003	15.1	2.84	.0877	.0165	15.0	2.82	233.					29900.	29900.	30100.	29900.	29900.	29900.
.004	15.1	3.76	.116	.0289	14.9	3.73	197.					13200.	13200.	13400.	13200.	13200.	13200.
.005	15.0	4.59	.144	.0440	14.9	4.55	166.					6990.	6990.	7160.	6990.	6990.	6990.
K .005465	15.0	4.94	.157	.0516	14.8	4.89	154.					5450.	5450.	5610.	5450.	5450.	5450.
.006	14.9	5.31	.171	.0608	14.8	5.25	141.					54400.	44300.	54600.	54400.	54400.	44300.
.008	14.8	6.52	.225	.0987	14.6	6.42	106.					42000.	34900.	42100.	42000.	42000.	34900.
.01	14.7	7.43	.276	.139	14.5	7.29	83.5					18800.	16400.	18900.	18800.	18800.	16400.
.015	14.5	8.93	.409	.247	14.1	8.68	52.7					10100.	9080.	10200.	10100.	10100.	9080.
.02	14.2	9.85	.513	.355	13.7	9.49	36.2					3300.	3080.	3360.	3310.	3300.	3080.
.03	13.7	10.8	.715	.562	13.0	10.2	19.7					1430.	1360.	1480.	1440.	1430.	1360.
.04	13.3	11.2	.888	.747	12.4	10.5	12.4					442.	427.	472.	453.	443.	428.
.05	12.9	11.3	1.04	.912	11.9	10.4	8.61					184.	179.	208.	195.	185.	180.
.06	12.5	11.3	1.18	1.06	11.4	10.2	6.35					92.3	90.4	112.	104.	93.3	91.3
.08	11.9	11.0	1.39	1.29	10.5	9.71	3.81					52.5	51.6	70.1	63.8	53.7	52.7
.1	11.3	10.7	1.56	1.48	9.77	9.22	2.51					21.7	21.4	36.5	32.7	23.1	22.7
.15	10.2	9.90	1.85	1.8	8.35	8.10	1.17					11.0	10.9	24.2	21.7	12.6	12.4
.2	9.35	9.16	2.02	1.98	7.33	7.18	.673					3.15	3.13	14.2	13.0	5.00	4.93
.3	8.13	8.04	2.19	2.17	5.94	5.87	.306					1.30	1.29	11.1	10.5	3.32	3.27
.4	7.28	7.23	2.26	2.24	5.03	4.99	.174					.379	.378	8.72	8.42	2.57	2.55
.5	6.65	6.62	2.27	2.26	4.38	4.36	.113					.166	.166	7.57	7.40	2.43	2.41
.6	6.15	6.13	2.26	2.25	3.89	3.88	.0795					.0915	.0913	6.82	6.71	2.36	2.35
.8	5.40	5.39	2.21	2.18	3.19	3.21	.0452					.0570	.0569	6.27	6.19	2.32	2.31
1.	4.86	4.85	2.14	2.11	2.72	2.74	.0290					.0282	.0282	5.46	5.42	2.24	2.21
1.5	3.95	3.94	1.95	1.92	1.99	2.02	.0132	.0245		.0245	.00772	.0170	.0170	4.90	4.87	2.16	2.13
2.	3.36	3.36	1.79	1.75	1.58	1.61	.00745	.0955		.0955	.0458	.00810	.00809	3.99	3.97	1.98	1.94
3.	2.65	2.65	1.53	1.48	1.12	1.17	.00330	.267	.000930	.268	.173	.00513	.00513	3.47	3.46	1.89	1.86
4.	2.21	2.21	1.34	1.28	.870	.928	.00185	.440	.00380	.444	.322	.00261	.00261	2.92	2.92	1.80	1.66
5.	1.91	1.91	1.20	1.13	.711	.779	.00120	.584	.00744	.591	.455	.00173	.00173	2.66	2.66	1.79	1.60
6.	1.69	1.69	1.09	1.01	.601	.676		.712	.0115	.723	.580	.00128	.00128	2.50	2.50	1.79	1.59
8.	1.38	1.38	.922	.842	.460	.538		.910	.0195	.929	.773	.00102	.00102	2.41	2.41	1.81	1.59
10.	1.18	1.18	.804	.719	.372	.461		1.10	.0270	1.13	.949			2.31	2.31	1.85	1.61
15.	.871	.871	.618	.531	.253	.340		1.42	.0423	1.46	1.22			2.31	2.31	1.93	1.67
20.	.699	.699	.508	.419	.191	.280		1.65	.0535	1.70	1.37			2.33	2.33	2.08	1.75
30.	.509	.509	.380	.281	.129	.228		2.00	.0713	2.07	1.56			2.40	2.40	2.21	1.79
40.	.404	.404	.307	.205	.0971	.199		2.22	.0845	2.30	1.63			2.58	2.58	2.45	1.84
50.	.338	.338	.260	.153	.0777	.185		2.40	.0933	2.49	1.65			2.70	2.70	2.61	1.84
60.	.291	.291	.226	.120	.0651	.171		2.52	.101	2.62	1.65			2.83	2.83	2.75	1.80
80.	.229	.229	.180	.0797	.0490	.149		2.71	.113	2.82	1.65			2.91	2.91	2.85	1.77
100.	.190	.190	.151	.0576	.0393	.132		2.90	.121	3.02	1.64			3.05	3.05	3.00	1.73
														3.21	3.21	3.17	1.70

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(cm^2/g = 0.01182 x barns/atom)

E (MeV)	$(\frac{\mu}{\rho})^{KN}_{inc,t}$	$(\frac{\mu}{\rho})^{BD}_{inc,t}$	$(\frac{\mu}{\rho})^{KN}_{inc,a}$	$(\frac{\mu}{\rho})^{BD}_{inc,a}$	$(\frac{\mu}{\rho})^{KN}_{inc,s}$	$(\frac{\mu}{\rho})^{BD}_{inc,s}$	$(\frac{\mu}{\rho})_{coh}$	$(\frac{\mu}{\rho})_{\kappa_n}$	$(\frac{\mu}{\rho})_{\kappa_e}$	$(\frac{\mu}{\rho})_{\kappa,t}$	$(\frac{\mu}{\rho})_{\kappa,a}$	$(\frac{\mu}{\rho})_{\tau,t}$	$(\frac{\mu}{\rho})_{\tau,a}$	$(\frac{\mu}{\rho})_{tot,t}$	$(\frac{\mu}{\rho})_{tot,t-coh}$	$(\frac{\mu}{\rho})_{tot,a}$	$(\frac{\mu}{\rho})_{tot,en}$
.001	.180	.00980	.000351	.0000175	.180	.00898	3.82					7980.	7980.	7980.	7980.	7980.	7980.
.0015	.180	.0154	.000525	.0000448	.180	.0154	3.55					2510.	2510.	2510.	2510.	2510.	2510.
.002	.180	.0216	.000696	.0000839	.178	.0215	3.27					1110.	1110.	1120.	1110.	1110.	1110.
.003	.178	.0336	.00104	.000195	.177	.0333	2.75					353.	353.	356.	353.	353.	353.
.004	.178	.0444	.00137	.000342	.176	.0441	2.33					156.	156.	158.	156.	156.	156.
.005	.177	.0543	.00170	.000520	.176	.0538	1.98					82.6	82.6	84.6	82.6	82.6	82.6
K .005465	.177	.0584	.00186	.000610	.175	.0578	1.82					64.4	64.4	66.3	64.4	64.4	64.4
.006	.176	.0628	.00202	.000719	.175	.0621	1.67					643.	524.	645.	643.	643.	524.
.008	.175	.0771	.00266	.00117	.173	.0759	1.25					496.	413.	498.	496.	496.	413.
.01	.174	.0878	.00326	.00164	.171	.0862	.987					222.	194.	223.	222.	222.	194.
.015	.171	.106	.00473	.00292	.167	.103	.623					119.	107.	121.	119.	119.	107.
.02	.168	.118	.00606	.00420	.162	.112	.428					39.0	36.4	39.7	39.1	39.0	36.4
.03	.162	.128	.00845	.00664	.154	.121	.233					16.9	16.1	17.5	17.0	16.9	16.1
.04	.157	.132	.0105	.00883	.147	.124	.147					5.22	5.05	5.58	5.35	5.24	5.06
.05	.152	.134	.0123	.0108	.141	.123	.102					2.17	2.12	2.46	2.30	2.19	2.13
.06	.148	.134	.0139	.0125	.135	.121	.0751					1.09	1.07	1.32	1.23	1.10	1.08
.08	.141	.130	.0164	.0152	.124	.115	.0450					.621	.610	.829	.754	.635	.623
.1	.134	.126	.0184	.0175	.115	.109	.0297					.256	.253	.431	.387	.273	.268
.15	.121	.117	.0219	.0213	.0987	.0957	.0138					.130	.129	.286	.256	.149	.147
.2	.111	.108	.0239	.0234	.0866	.0849	.00795					.0372	.0370	.168	.154	.0591	.0583
.3	.0961	.0950	.0259	.0256	.0702	.0694	.00362					.0154	.0152	.131	.124	.0392	.0387
.4	.0860	.0855	.0267	.0265	.0595	.0590	.00206					.00448	.00447	.103	.0995	.0304	.0301
.5	.0786	.0782	.0268	.0267	.0518	.0515	.00134					.00196	.00196	.0895	.0875	.0287	.0285
.6	.0727	.0725	.0267	.0266	.0460	.0459	.000940					.00108	.00108	.0806	.0793	.0279	.0278
.8	.0638	.0637	.0261	.0258	.0377	.0379	.000534					.000674	.000673	.0741	.0732	.0274	.0273
1.	.0574	.0573	.0253	.0249	.0322	.0324	.000343					.000333	.000333	.0645	.0641	.0265	.0261
1.5	.0467	.0466	.0230	.0227	.0235	.0239	.000156	.000290		.000290	.0000913	.000201	.000201	.0579	.0576	.0255	.0252
2.	.0397	.0397	.0212	.0207	.0187	.0190	.0000881	.00113		.00113	.000541	.0000957	.0000956	.0472	.0469	.0234	.0229
3.	.0313	.0313	.0181	.0175	.0132	.0138	.0000390	.00316	.0000110	.00317	.00204	.0000606	.0000606	.0410	.0409	.0223	.0213
4.	.0261	.0261	.0158	.0151	.0103	.0110	.0000219	.00520	.0000449	.00525	.00381	.0000309	.0000309	.0345	.0345	.0213	.0196
5.	.0226	.0226	.0142	.0134	.00840	.00921	.0000142	.00690	.0000879	.00699	.00538	.0000204	.0000204	.0314	.0314	.0212	.0189
6.	.0200	.0200	.0129	.0119	.00710	.00799		.00842	.000136	.00855	.00686	.0000151	.0000151	.0295	.0295	.0212	.0188
8.	.0163	.0163	.0109	.00995	.00544	.00636		.0108	.000230	.0110	.00914	.0000121	.0000121	.0288	.0285	.0214	.0188
10.	.0139	.0139	.00950	.00850	.00440	.00545		.0130	.000319	.0134	.0112			.0273	.0273	.0219	.0190
15.	.0103	.0103	.00730	.00628	.00299	.00402		.0168	.000500	.0173	.0144			.0273	.0273	.0228	.0197
20.	.00826	.00826	.00600	.00495	.00226	.00331		.0195	.000632	.0201	.0162			.0275	.0275	.0246	.0207
30.	.00602	.00602	.00449	.00332	.00152	.00269		.0236	.000843	.0245	.0184			.0284	.0284	.0261	.0212
40.	.00478	.00478	.00363	.00242	.00115	.00235		.0262	.000999	.0272	.0193			.0305	.0305	.0290	.0217
50.	.00400	.00400	.00307	.00181	.000918	.00219		.0284	.00110	.0294	.0195			.0319	.0319	.0309	.0217
60.	.00344	.00344	.00267	.00142	.000769	.00202		.0298	.00119	.0310	.0195			.0335	.0335	.0325	.0213
80.	.00271	.00271	.00213	.000942	.000579	.00176		.0328	.00134	.0333	.0195			.0344	.0344	.0337	.0209
100.	.00225	.00225	.00178	.000681	.000465	.00156		.0343	.00143	.0357	.0194			.0361	.0361	.0355	.0204
														.0379	.0379	.0375	.0201

24 CHROMIUM
(barns/atom)

E (MeV)	KN $\sigma_{inc,t}$	BD $\sigma_{inc,t}$	KN $\sigma_{inc,a}$	BD $\sigma_{inc,a}$	KN $\sigma_{inc,s}$	BD $\sigma_{inc,s}$	σ_{coh}	σ_{n_n}	σ_{n_e}	$\sigma_{n,t}$	$\sigma_{n,a}$	$\sigma_{r,t}$	$\sigma_{r,a}$	$\sigma_{tot,t}$	$\sigma_{tot,t-coh}$	$\sigma_{tot,a}$	$\sigma_{tot,en}$
.001	15.9	.732	.0310	.00143	15.9	.731	354.					808000.	808000.	808000.	808000.	808000.	808000.
.0015	15.9	1.28	.0463	.00373	15.8	1.28	330.					254000.	254000.	254000.	254000.	254000.	254000.
.002	15.8	1.82	.0615	.00706	15.8	1.81	306.					113000.	113000.	113000.	113000.	113000.	113000.
.003	15.8	2.83	.0915	.0164	15.7	2.81	259.					35800.	35800.	36100.	35800.	35800.	35800.
.004	15.7	3.77	.121	.0290	15.6	3.74	219.					15900.	15900.	16100.	15900.	15900.	15900.
.005	15.7	4.61	.150	.0442	15.5	4.57	186.					8440.	8440.	8630.	8440.	8440.	8440.
K .005989	15.6	5.35	.178	.0612	15.4	5.29	158.					5050.	5050.	5210.	5060.	5050.	5050.
.006	15.6	5.36	.179	.0614	15.4	5.30	158.					49200.	39100.	49400.	49200.	49200.	39100.
.008	15.5	6.63	.234	.100	15.2	6.53	118.					49000.	39000.	49200.	49000.	49000.	39000.
.01	15.4	7.62	.288	.143	15.1	7.48	92.7					22000.	18600.	22100.	22000.	22000.	18600.
.015	15.1	9.20	.417	.254	14.7	8.95	58.1					11800.	10300.	11900.	11800.	11800.	10300.
.02	14.8	10.2	.535	.368	14.3	9.83	40.1					3800.	3490.	3870.	3810.	3800.	3490.
.03	14.3	11.2	.746	.583	13.6	10.6	21.9					1670.	1570.	1720.	1680.	1670.	1570.
.04	13.9	11.6	.926	.774	13.0	10.8	13.8					523.	502.	556.	536.	524.	503.
.05	13.5	11.7	1.09	.944	12.4	10.8	9.55					221.	214.	246.	233.	222.	215.
.06	13.1	11.7	1.23	1.10	11.9	10.6	7.04					111.	108.	132.	123.	112.	109.
.08	12.4	11.5	1.45	1.35	11.0	10.2	4.23					63.2	61.9	81.9	74.9	64.4	63.0
.1	11.8	11.2	1.63	1.55	10.2	9.65	2.78					26.0	25.6	41.7	37.5	27.4	26.9
.15	10.6	10.3	1.93	1.87	8.71	8.43	1.30					13.2	13.0	27.2	24.4	14.8	14.5
.2	9.75	9.55	2.11	2.06	7.65	7.49	.747					3.80	3.77	15.4	14.1	5.73	5.64
.3	8.48	8.39	2.29	2.26	6.20	6.13	.340					1.58	1.57	11.9	11.1	3.69	3.63
.4	7.60	7.54	2.35	2.34	5.25	5.20	.193					.462	.460	9.19	8.85	2.75	2.72
.5	6.94	6.90	2.37	2.36	4.57	4.54	.125					.204	.203	7.94	7.74	2.55	2.54
.6	6.42	6.39	2.36	2.35	4.06	4.04	.0886					.113	.113	7.14	7.01	2.48	2.47
.8	5.64	5.62	2.31	2.28	3.33	3.34	.0503					.0712	.0711	6.55	6.46	2.43	2.42
1.	5.07	5.06	2.23	2.20	2.84	2.86	.0322					.0354	.0353	5.71	5.66	2.35	2.32
1.5	4.12	4.11	2.04	2.01	2.08	2.10	.0146	.0270		.0270	.00850	.0218	.0218	5.11	5.08	2.25	2.22
2.	3.51	3.51	1.86	1.83	1.65	1.68	.00830	.104		.104	.0499	.0100	.00999	4.16	4.15	2.08	2.03
3.	2.76	2.76	1.59	1.54	1.17	1.22	.00369	.290	.000970	.291	.188	.00622	.00622	3.63	3.62	1.97	1.89
4.	2.31	2.31	1.40	1.34	.908	.970	.00206	.480	.00397	.484	.350	.00329	.00329	3.06	3.05	1.88	1.73
5.	1.99	1.99	1.25	1.18	.742	.814	.00134	.637	.00778	.645	.496	.00218	.00218	2.80	2.80	1.89	1.69
6.	1.76	1.76	1.13	1.05	.627	.706		.776	.0120	.788	.630	.00162	.00162	2.64	2.64	1.90	1.68
8.	1.44	1.44	.962	.876	.480	.564		.995	.0204	1.02	.843	.00130	.00130	2.55	2.55	1.92	1.68
10.	1.23	1.23	.839	.747	.389	.483		1.20	.0282	1.23	1.03			2.46	2.46	1.98	1.72
15.	.909	.909	.645	.551	.264	.358		1.55	.0441	1.59	1.33			2.46	2.46	2.07	1.78
20.	.729	.729	.530	.435	.199	.294		1.80	.0559	1.86	1.48			2.50	2.50	2.23	1.88
30.	.531	.531	.397	.291	.134	.240		2.16	.0744	2.23	1.67			2.59	2.59	2.39	1.91
40.	.422	.422	.321	.210	.101	.212		2.40	.0880	2.49	1.75			2.76	2.76	2.63	1.96
50.	.352	.352	.271	.157	.0811	.195		2.60	.0973	2.70	1.77			2.91	2.91	2.81	1.96
60.	.303	.303	.235	.122	.0679	.181		2.74	.105	2.84	1.78			3.05	3.05	2.97	1.93
80.	.239	.239	.188	.0813	.0511	.158		2.93	.117	3.05	1.76			3.14	3.14	3.08	1.90
100.	.199	.199	.158	.0591	.0410	.140		3.13	.126	3.26	1.75			3.29	3.29	3.24	1.84
														3.46	3.46	3.42	1.81

24 CHROMIUM

(cm^2/g = 0.01158 x barns/atom)

E (MeV)	$(\frac{\mu}{\rho})^{KN}_{inc,t}$	$(\frac{\mu}{\rho})^{BD}_{inc,t}$	$(\frac{\mu}{\rho})^{KN}_{inc,a}$	$(\frac{\mu}{\rho})^{BD}_{inc,a}$	$(\frac{\mu}{\rho})^{KN}_{inc,s}$	$(\frac{\mu}{\rho})^{BD}_{inc,s}$	$(\frac{\mu}{\rho})_{coh}$	$(\frac{\mu}{\rho})_{\kappa n}$	$(\frac{\mu}{\rho})_{\kappa e}$	$(\frac{\mu}{\rho})_{\kappa,t}$	$(\frac{\mu}{\rho})_{\kappa,a}$	$(\frac{\mu}{\rho})_{\tau,t}$	$(\frac{\mu}{\rho})_{\tau,a}$	$(\frac{\mu}{\rho})_{tot,t}$	$(\frac{\mu}{\rho})_{tot,t-coh}$	$(\frac{\mu}{\rho})_{tot,a}$	$(\frac{\mu}{\rho})_{tot,en}$
-												9360.	9360.	9360.	9360.	9360.	9360.
.001	.184	.00848	.000359	.0000166	.184	.00846	4.10					2940.	2940.	2940.	2940.	2940.	2940.
.0015	.184	.0148	.000536	.0000432	.183	.0148	3.82					1310.	1310.	1310.	1310.	1310.	1310.
.002	.183	.0211	.000712	.0000818	.183	.0210	3.54					415.	415.	418.	415.	415.	415.
.003	.183	.0328	.00106	.000190	.182	.0325	3.00					184.	184.	186.	184.	184.	184.
.004	.182	.0437	.00140	.000336	.181	.0433	2.54					97.7	97.7	99.9	97.7	97.7	97.7
.005	.182	.0534	.00174	.000512	.179	.0529	2.15					58.5	58.5	60.3	58.6	58.5	58.5
K .005989	.181	.0620	.00206	.000709	.178	.0613	1.83					570.	453.	572.	570.	570.	453.
.006	.181	.0621	.00207	.000711	.178	.0614	1.83					567.	452.	570.	567.	567.	452.
.008	.179	.0768	.00271	.00116	.176	.0756	1.37					255.	215.	256.	255.	255.	215.
.01	.178	.0882	.00334	.00166	.175	.0866	1.07					137.	119.	138.	137.	137.	119.
.015	.175	.107	.00483	.00294	.170	.104	.673					44.0	40.4	44.8	44.1	44.0	40.4
.02	.171	.118	.00620	.00426	.166	.114	.464					19.3	18.2	19.9	19.5	19.3	18.2
.03	.166	.130	.00864	.00675	.157	.123	.254					6.06	5.81	6.44	6.18	6.07	5.82
.04	.161	.134	.0107	.00896	.151	.125	.160					2.56	2.48	2.85	2.70	2.57	2.49
.05	.156	.135	.0126	.0109	.144	.125	.111					1.29	1.25	1.53	1.42	1.30	1.26
.06	.152	.135	.0142	.0127	.138	.123	.0815					.732	.717	.948	.867	.746	.730
.08	.144	.133	.0168	.0156	.127	.118	.0490					.301	.296	.483	.434	.317	.312
.1	.137	.130	.0189	.0179	.118	.112	.0322					.153	.151	.315	.283	.171	.168
.15	.123	.119	.0223	.0217	.101	.0976	.0151					.0440	.0437	.178	.163	.0664	.0653
.2	.113	.111	.0244	.0239	.0886	.0867	.00865					.0183	.0182	.138	.129	.0427	.0420
.3	.0982	.0972	.0265	.0262	.0718	.0710	.00394					.00535	.00533	.106	.102	.0318	.0315
.4	.0880	.0873	.0272	.0271	.0608	.0602	.00223					.00236	.00235	.0919	.0896	.0295	.0294
.5	.0804	.0799	.0274	.0273	.0529	.0526	.00145					.00131	.00131	.0827	.0812	.0287	.0286
.6	.0743	.0740	.0273	.0272	.0470	.0468	.00103					.000824	.000823	.0758	.0748	.0281	.0280
.8	.0653	.0651	.0267	.0264	.0386	.0387	.000582					.000410	.000409	.0661	.0655	.0272	.0269
1.	.0587	.0586	.0258	.0255	.0329	.0331	.000373					.000252	.000252	.0592	.0588	.0261	.0257
1.5	.0477	.0476	.0236	.0233	.0241	.0243	.000169	.000313		.000313	.0000984	.000116	.000116	.0482	.0481	.0241	.0235
2.	.0406	.0406	.0215	.0212	.0191	.0195	.0000961	.00120		.00120	.000578	.0000720	.0000720	.0420	.0419	.0228	.0219
3.	.0320	.0320	.0184	.0178	.0135	.0141	.0000427	.00336	.0000112	.00337	.00218	.0000381	.0000381	.0354	.0353	.0218	.0200
4.	.0267	.0267	.0162	.0155	.0105	.0112	.0000239	.00556	.0000460	.00560	.00405	.0000252	.0000252	.0324	.0324	.0219	.0196
5.	.0230	.0230	.0145	.0137	.00859	.00943	.0000155	.00738	.0000901	.00747	.00574	.0000188	.0000188	.0306	.0306	.0220	.0195
6.	.0204	.0204	.0131	.0122	.00726	.00818		.00899	.000139	.00913	.00730	.0000151	.0000151	.0295	.0295	.0222	.0195
8.	.0167	.0167	.0111	.0101	.00556	.00653		.0115	.000236	.0118	.00976			.0285	.0285	.0229	.0199
10.	.0142	.0142	.00972	.00865	.00450	.00559		.0139	.000327	.0142	.0119			.0285	.0285	.0240	.0206
15.	.0105	.0105	.00747	.00638	.00306	.00415		.0179	.000511	.0184	.0154			.0289	.0289	.0258	.0218
20.	.00844	.00844	.00614	.00504	.00230	.00340		.0208	.000647	.0215	.0171			.0300	.0300	.0277	.0221
30.	.00615	.00615	.00460	.00337	.00155	.00278		.0250	.000862	.0258	.0193			.0320	.0320	.0305	.0227
40.	.00489	.00489	.00372	.00243	.00117	.00245		.0278	.00102	.0288	.0203			.0337	.0337	.0325	.0227
50.	.00408	.00408	.00314	.00182	.000939	.00226		.0301	.00113	.0313	.0205			.0353	.0353	.0344	.0223
60.	.00351	.00351	.00272	.00141	.000786	.00210		.0317	.00122	.0329	.0206			.0364	.0364	.0357	.0220
80.	.00277	.00277	.00218	.000941	.000592	.00183		.0339	.00135	.0353	.0204			.0381	.0381	.0375	.0213
100.	.00230	.00230	.00183	.000684	.000475	.00162		.0362	.00146	.0378	.0203			.0401	.0401	.0396	.0210

25 MANGANESE
(barns/atom)

E (MeV)	KN $\sigma_{inc,t}$	BD $\sigma_{inc,t}$	KN $\sigma_{inc,a}$	BD $\sigma_{inc,a}$	KN $\sigma_{inc,s}$	BD $\sigma_{inc,s}$	σ_{coh}	σ_{x_n}	σ_{x_α}	$\sigma_{x,t}$	$\sigma_{x,a}$	$\sigma_{r,t}$	$\sigma_{r,a}$	$\sigma_{tot,t}$	$\sigma_{tot,t-coh}$	$\sigma_{tot,a}$	$\sigma_{tot,en}$
.001	16.6	.836	.0323	.00163	16.5	.834	386.					950000.	950000.	950000.	950000.	950000.	950000.
.0015	16.5	1.44	.0482	.00420	16.5	1.44	362.					301000.	301000.	301000.	301000.	301000.	301000.
.002	16.5	1.99	.0640	.00772	16.4	1.98	336.					135000.	135000.	135000.	135000.	135000.	135000.
.003	16.4	2.99	.0953	.0173	16.3	2.97	287.					43000.	43000.	43300.	43000.	43000.	43000.
.004	16.4	3.91	.126	.0301	16.2	3.88	244.					19100.	19100.	19300.	19100.	19100.	19100.
.005	16.3	4.75	.156	.0455	16.2	4.70	207.					10100.	10100.	10300.	10100.	10100.	10100.
.006	16.2	5.50	.186	.0630	16.1	5.44	177.					6020.	6020.	6200.	6030.	6020.	6020.
K .006539	16.2	5.88	.202	.0732	16.0	5.81	163.					4690.	4690.	4860.	4700.	4690.	4690.
.008	16.1	6.79	.244	.103	15.9	6.69	132.					44700.	34500.	44900.	44700.	44700.	34500.
.01	16.0	7.81	.300	.146	15.7	7.66	103.					25300.	20600.	25400.	25300.	25300.	20600.
.015	15.7	9.48	.435	.262	15.3	9.22	64.3					13600.	11600.	13700.	13600.	13600.	11600.
.02	15.4	10.5	.557	.379	14.9	10.1	44.4					4410.	3970.	4480.	4420.	4410.	3970.
.03	14.9	11.6	.777	.604	14.2	11.0	24.3					1960.	1810.	2010.	1970.	1960.	1810.
.04	14.5	12.0	.965	.800	13.5	11.2	15.3					620.	589.	656.	632.	621.	590.
.05	14.0	12.2	1.13	.984	12.9	11.2	10.6					262.	252.	289.	274.	263.	253.
.06	13.6	12.2	1.28	1.14	12.4	11.1	7.82					132.	128.	155.	144.	133.	129.
.08	12.9	11.9	1.51	1.39	11.4	10.5	4.79					75.0	73.1	95.0	87.2	76.3	74.2
.1	12.3	11.6	1.70	1.60	10.6	10.0	3.09					31.6	31.0	48.2	43.5	33.1	32.4
.15	11.1	10.7	2.01	1.94	9.08	8.76	1.44					15.9	15.7	30.6	27.5	17.6	17.3
.2	10.2	9.94	2.20	2.15	7.96	7.79	.831					4.60	4.55	16.7	15.3	6.61	6.49
.3	8.83	8.73	2.38	2.35	6.45	6.38	.378					1.91	1.90	12.7	11.8	4.11	4.05
.4	7.91	7.86	2.45	2.43	5.46	5.43	.215					.560	.557	9.67	9.29	2.94	2.91
.5	7.23	7.19	2.47	2.46	4.76	4.73	.139					.250	.249	8.32	8.11	2.70	2.68
.6	6.69	6.66	2.46	2.44	4.23	4.22	.0985					.139	.139	7.47	7.33	2.61	2.60
.8	5.87	5.86	2.40	2.37	3.47	3.49	.0568					.0870	.0868	6.85	6.75	2.55	2.53
1.	5.28	5.27	2.32	2.29	2.96	2.98	.0359					.0440	.0439	5.96	5.90	2.44	2.41
1.5	4.29	4.28	2.12	2.09	2.17	2.19	.0163	.0294		.0294	.00926	.0270	.0270	5.33	5.30	2.35	2.32
2.	3.66	3.66	1.94	1.90	1.72	1.76	.00925	.113		.113	.0541	.0124	.0124	4.34	4.32	2.16	2.11
3.	2.88	2.88	1.66	1.61	1.22	1.27	.00410	.316	.00101	.317	.204	.00770	.00769	3.79	3.78	2.06	1.96
4.	2.40	2.40	1.46	1.39	.945	1.01	.00229	.520	.00413	.524	.379	.00406	.00406	3.21	3.20	1.98	1.82
5.	2.08	2.08	1.30	1.23	.773	.853	.00150	.690	.0081	.698	.535	.00267	.00267	2.93	2.93	1.99	1.77
6.	1.84	1.84	1.18	1.10	.653	.742	.00102	.842	.0125	.854	.681	.00202	.00202	2.78	2.78	2.00	1.77
8.	1.50	1.50	1.00	.907	.500	.592		1.08	.0213	1.10	.911	.00163	.00163	2.70	2.70	2.04	1.78
10.	1.28	1.28	.874	.771	.405	.509		1.30	.0293	1.33	1.12	.00118	.00118	2.60	2.60	2.10	1.82
15.	.946	.946	.672	.569	.274	.377		1.68	.0480	1.73	1.43			2.61	2.61	2.20	1.89
20.	.760	.760	.552	.449	.208	.311		1.95	.0582	2.01	1.59			2.68	2.68	2.40	2.00
30.	.553	.553	.413	.299	.140	.254		2.34	.0776	2.42	1.79			2.77	2.77	2.56	2.04
40.	.439	.439	.334	.213	.105	.226		2.61	.0918	2.70	1.88			2.97	2.97	2.83	2.09
50.	.367	.367	.282	.161	.0845	.206		2.82	.102	2.92	1.90			3.14	3.14	3.03	2.09
60.	.316	.316	.245	.126	.0707	.190		2.97	.109	3.08	1.90			3.29	3.29	3.20	2.06
80.	.249	.249	.196	.0832	.0532	.166		3.19	.122	3.31	1.90			3.40	3.40	3.32	2.03
100.	.207	.207	.164	.0604	.0427	.147		3.40	.131	3.53	1.88			3.56	3.56	3.51	1.98
														3.74	3.74	3.69	1.94

25 MANGANESE

(cm^2/g = 0.01096 x barns/atom)

E (MeV)	$(\frac{\mu}{\rho})^{KN}_{inc,t}$	$(\frac{\mu}{\rho})^{BD}_{inc,t}$	$(\frac{\mu}{\rho})^{KN}_{inc,a}$	$(\frac{\mu}{\rho})^{BD}_{inc,a}$	$(\frac{\mu}{\rho})^{KN}_{inc,s}$	$(\frac{\mu}{\rho})^{BD}_{inc,s}$	$(\frac{\mu}{\rho})_{coh}$	$(\frac{\mu}{\rho})_{\kappa n}$	$(\frac{\mu}{\rho})_{\kappa e}$	$(\frac{\mu}{\rho})_{\kappa,t}$	$(\frac{\mu}{\rho})_{\kappa,a}$	$(\frac{\mu}{\rho})_{\tau,t}$	$(\frac{\mu}{\rho})_{\tau,a}$	$(\frac{\mu}{\rho})_{tot,t}$	$(\frac{\mu}{\rho})_{tot,t-coh}$	$(\frac{\mu}{\rho})_{tot,a}$	$(\frac{\mu}{\rho})_{tot,en}$
.001	.182	.00916	.000354	.0000179	.181	.00914	4.23					10400.	10400.	10400.	10400.	10400.	10400.
.0015	.181	.0158	.000528	.0000460	.181	.0158	3.97					3300.	3300.	3300.	3300.	3300.	3300.
.002	.181	.0218	.000701	.0000846	.180	.0217	3.68					1480.	1480.	1480.	1480.	1480.	1480.
.003	.180	.0328	.00104	.000190	.179	.0326	3.15					471.	471.	475.	471.	471.	471.
.004	.180	.0429	.00138	.000330	.178	.0425	2.67					209.	209.	212.	209.	209.	209.
.005	.179	.0521	.00171	.000499	.178	.0515	2.27					111.	111.	113.	111.	111.	111.
.006	.178	.0603	.00204	.000690	.176	.0596	1.94					66.0	66.0	68.0	66.1	66.0	66.0
K .006539	.178	.0644	.00221	.000802	.175	.0637	\1.79					51.4	51.4	53.3	51.5	51.4	51.4
.008	.176	.0744	.00267	.00113	.174	.0733	1.45					490.	378.	492.	490.	490.	378.
.01	.175	.0856	.00329	.00160	.172	.0840	1.13					277.	226.	278.	277.	277.	226.
.015	.172	.104	.00477	.00287	.168	.101	.705					149.	127.	150.	149.	149.	127.
.02	.169	.115	.00610	.00415	.163	.111	.487					48.3	43.5	49.1	48.4	48.3	43.5
.03	.163	.127	.00852	.00662	.156	.121	.266					21.5	19.8	22.0	21.6	21.5	19.8
.04	.159	.132	.0106	.00877	.148	.123	.168					6.80	6.46	7.19	6.93	6.81	6.47
.05	.153	.134	.0124	.0108	.141	.123	.116					2.87	2.76	3.17	3.00	2.88	2.77
.06	.149	.134	.0140	.0125	.136	.122	.0857					1.45	1.40	1.70	1.58	1.46	1.41
.08	.141	.130	.0165	.0152	.125	.115	.0515					.822	.801	1.04	.956	.836	.813
.1	.135	.127	.0186	.0175	.116	.110	.0339					.346	.340	.528	.477	.363	.355
.15	.122	.117	.0220	.0213	.0995	.0960	.0158					.174	.172	.335	.301	.193	.190
.2	.112	.109	.0241	.0236	.0872	.0854	.00911					.0504	.0499	.183	.168	.0724	.0711
.3	.0968	.0957	.0261	.0258	.0707	.0699	.00414					.0209	.0208	.139	.129	.0450	.0444
.4	.0867	.0861	.0269	.0266	.0598	.0595	.00236					.00614	.00610	.106	.102	.0322	.0319
.5	.0792	.0788	.0271	.0270	.0522	.0518	.00152					.00274	.00273	.0912	.0889	.0296	.0294
.6	.0733	.0730	.0270	.0267	.0464	.0463	.00108					.00152	.00152	.0819	.0803	.0286	.0285
.8	.0643	.0642	.0263	.0260	.0380	.0383	.000614					.000954	.000951	.0751	.0740	.0279	.0277
1.	.0579	.0578	.0254	.0251	.0324	.0327	.000393					.000482	.000481	.0653	.0647	.0267	.0264
1.5	.0470	.0469	.0232	.0229	.0238	.0240	.000179	.000322		.000322	.000101	.000296	.000296	.0584	.0581	.0258	.0256
2.	.0401	.0401	.0213	.0208	.0189	.0193	.000101	.00124		.00124	.000593	.000136	.000136	.0476	.0473	.0237	.0231
3.	.0316	.0316	.0182	.0176	.0134	.0139	.0000449	.00346	.0000111	.00347	.00224	.0000844	.0000843	.0415	.0414	.0226	.0215
4.	.0263	.0263	.0160	.0152	.0104	.0111	.0000251	.00570	.0000453	.00574	.00415	.0000445	.0000445	.0352	.0351	.0217	.0199
5.	.0228	.0228	.0142	.0135	.00847	.00935	.0000164	.00756	.0000888	.00765	.00586	.0000293	.0000293	.0321	.0321	.0218	.0194
6.	.0202	.0202	.0129	.0121	.00716	.00813	.0000112	.00923	.000137	.00936	.00746	.0000221	.0000221	.0305	.0305	.0219	.0194
8.	.0164	.0164	.0110	.00994	.00548	.00649		.0118	.000233	.0121	.00998	.0000179	.0000179	.0296	.0296	.0224	.0195
10.	.0140	.0140	.00958	.00845	.00444	.00558		.0142	.000321	.0146	.0123	.0000129	.0000129	.0285	.0285	.0230	.0199
15.	.0104	.0104	.00737	.00624	.003 00	.00413		.0184	.000504	.0190	.0157			.0286	.0286	.0241	.0207
20.	.00833	.00833	.00605	.00492	.00228	.00341		.0214	.000638	.0220	.0174			.0294	.0294	.0263	.0219
30.	.00606	.00606	.00453	.00328	.00153	.00278		.0256	.000850	.0265	.0196			.0304	.0304	.0281	.0224
40.	.00481	.00481	.00366	.00233	.00115	.00248		.0286	.00101	.0296	.0206			.0326	.0326	.0310	.0229
50.	.00402	.00402	.00309	.00176	.000926	.00226		.0309	.00112	.0320	.0208			.0344	.0344	.0332	.0229
60.	.00346	.00346	.00269	.00138	.000775	.00208		.0326	.00119	.0338	.0208			.0361	.0361	.0351	.0226
80.	.00273	.00273	.00215	.000912	.000583	.00182		.0350	.00134	.0363	.0208			.0373	.0373	.0364	.0222
100.	.00227	.00227	.00180	.000662	.000468	.00161		.0373	.00144	.0387	.0206			.0390	.0390	.0385	.0217
														.0410	.0410	.0404	.0213

26 IRON
(barns/atom)

E (MeV)	KN $\sigma_{inc,t}$	BD $\sigma_{inc,t}$	KN $\sigma_{inc,a}$	BD $\sigma_{inc,a}$	KN $\sigma_{inc,s}$	BD $\sigma_{inc,s}$	σ_{coh}	$\sigma_{\kappa n}$	$\sigma_{\kappa e}$	$\sigma_{\kappa,t}$	$\sigma_{\kappa,a}$	$\sigma_{\gamma,t}$	$\sigma_{\gamma,a}$	$\sigma_{tot,t}$	$\sigma_{tot,t-coh}$	$\sigma_{tot,a}$	$\sigma_{tot,en}$
.001	17.2	.809	.0336	.00158	17.2	.807	420.					1120000.	1120000.	1120000.	1120000.	1120000.	1120000.
.0015	17.2	1.41	.0502	.00411	17.1	1.41	396.					355000.	355000.	355000.	355000.	355000.	355000.
.002	17.2	1.97	.0666	.00764	17.1	1.96	368.					159000.	159000.	159000.	159000.	159000.	159000.
.003	17.1	2.98	.0991	.0173	17.0	2.96	316.					50700.	50700.	51000.	50700.	50700.	50700.
.004	17.0	3.93	.131	.0302	16.9	3.90	270.					22400.	22400.	22700.	22400.	22400.	22400.
.005	17.0	4.79	.162	.0459	16.8	4.74	230.					12000.	12000.	12200.	12000.	12000.	12000.
.006	16.9	5.56	.193	.0637	16.7	5.50	197.					7100.	7100.	7300.	7110.	7100.	7100.
K .007112	16.8	6.34	.227	.0856	16.6	6.25	167.					4380.	4380.	4550.	4390.	4380.	4380.
												40800.	30500.	41000.	40800.	40800.	30500.
.008	16.8	6.90	.254	.104	16.5	6.80	147.					29200.	22700.	29400.	29200.	29200.	22700.
.01	16.7	7.98	.312	.150	16.3	7.83	115.					15700.	12900.	15800.	15700.	15700.	12900.
.015	16.4	9.72	.452	.269	15.9	9.45	70.8					5050.	4450.	5130.	5060.	5060.	4450.
.02	16.1	10.8	.580	.398	15.5	10.4	49.0					2250.	2050.	2310.	2260.	2250.	2050.
.03	15.5	12.0	.808	.624	14.7	11.4	26.9					717.	674.	756.	729.	718.	675.
.04	15.0	12.4	1.00	.827	14.0	11.6	17.0					308.	294.	337.	320.	309.	295.
.05	14.6	12.6	1.18	1.02	13.4	11.6	11.7					156.	150.	180.	169.	157.	151.
.06	14.2	12.6	1.33	1.18	12.9	11.4	8.64					89.1	86.4	110.	102.	90.4	87.6
.08	13.4	12.4	1.57	1.45	11.9	10.9	5.20					37.5	36.7	55.1	49.9	39.1	38.1
.1	12.8	12.0	1.77	1.66	11.0	10.3	3.42					18.9	18.6	34.3	30.9	20.7	20.3
.15	11.5	11.1	2.09	2.01	9.44	9.09	1.59					5.48	5.41	18.2	16.6	7.57	7.42
.2	10.6	10.3	2.28	2.23	8.28	8.07	.919					2.27	2.25	13.5	12.6	4.55	4.48
.3	9.19	9.08	2.48	2.45	6.71	6.63	.418					.670	.666	10.2	9.75	3.15	3.12
.4	8.23	8.17	2.55	2.52	5.68	5.65	.237					.303	.302	8.71	8.47	2.85	2.82
.5	7.52	7.47	2.56	2.55	4.95	4.92	.156					.168	.167	7.79	7.64	2.73	2.72
.6	6.95	6.92	2.56	2.54	4.40	4.38	.108					.107	.107	7.13	7.03	2.67	2.65
.8	6.11	6.09	2.50	2.47	3.61	3.62	.0619					.0540	.0539	6.21	6.14	2.55	2.52
1.	5.49	5.48	2.42	2.38	3.08	3.10	.0395					.0328	.0327	5.55	5.51	2.45	2.41
1.5	4.46	4.46	2.21	2.18	2.25	2.28	.0179	.0320		.0320	.00992	.0150	.0150	4.52	4.51	2.26	2.20
2.	3.80	3.80	2.02	1.98	1.79	1.82	.0102	.123		.123	.0581	.00930	.00929	3.94	3.93	2.15	2.05
3.	2.99	2.99	1.73	1.67	1.26	1.32	.0045	.343	.00105	.344	.218	.00500	.00500	3.34	3.34	2.08	1.89
4.	2.50	2.50	1.52	1.44	.983	1.05	.00254	.561	.00430	.565	.402	.00333	.00333	3.07	3.07	2.09	1.85
5.	2.16	2.16	1.36	1.27	.804	.888	.00166	.748	.00840	.756	.570	.00250	.00250	2.92	2.92	2.12	1.84
6.	1.91	1.91	1.23	1.14	.680	.770	.00114	.910	.0130	.923	.722	.00200	.00200	2.84	2.83	2.15	1.86
8.	1.56	1.56	1.04	.944	.520	.616		1.17	.0221	1.19	.967	.00145	.00145	2.75	2.75	2.23	1.91
10.	1.33	1.33	.909	.798	.421	.532		1.40	.0304	1.43	1.18	.00113	.00113	2.76	2.76	2.34	1.98
15.	.984	.984	.699	.590	.285	.394		1.81	.0478	1.86	1.50			2.84	2.84	2.56	2.09
20.	.790	.790	.574	.465	.216	.325		2.10	.0606	2.16	1.68			2.95	2.95	2.73	2.14
30.	.575	.575	.430	.308	.145	.267		2.52	.0807	2.60	1.88			3.17	3.17	3.03	2.19
40.	.457	.457	.347	.218	.110	.239		2.82	.095	2.91	1.98			3.37	3.37	3.26	2.20
50.	.382	.382	.294	.165	.0879	.217		3.04	.105	3.14	2.00			3.52	3.52	3.43	2.16
60.	.329	.329	.255	.129	.0736	.200		3.20	.113	3.31	1.99			3.64	3.64	3.56	2.12
80.	.259	.259	.204	.0852	.0554	.174		3.43	.127	3.56	1.98			3.82	3.82	3.76	2.07
100.	.215	.215	.171	.0619	.0444	.153		3.65	.136	3.79	1.96			4.00	4.00	3.96	2.02

26 IRON

(cm^2/g = 0.01078 x barns/atom)

E (MeV)	$(\frac{\mu}{\rho})^{KN}_{inc,t}$	$(\frac{\mu}{\rho})^{BD}_{inc,t}$	$(\frac{\mu}{\rho})^{KN}_{inc,a}$	$(\frac{\mu}{\rho})^{BD}_{inc,a}$	$(\frac{\mu}{\rho})^{KN}_{inc,s}$	$(\frac{\mu}{\rho})^{BD}_{inc,s}$	$(\frac{\mu}{\rho})_{coh}$	$(\frac{\mu}{\rho})_{\kappa_n}$	$(\frac{\mu}{\rho})_{\kappa_e}$	$(\frac{\mu}{\rho})_{\kappa,t}$	$(\frac{\mu}{\rho})_{\kappa,a}$	$(\frac{\mu}{\rho})_{\tau,t}$	$(\frac{\mu}{\rho})_{\tau,a}$	$(\frac{\mu}{\rho})_{tot,t}$	$(\frac{\mu}{\rho})_{tot,t-coh}$	$(\frac{\mu}{\rho})_{tot,a}$	$(\frac{\mu}{\rho})_{tot,en}$
.001	.185	.00872	.000362	.0000170	.185	.00870	4.53					12100.	12100.	12100.	12100.	12100.	12100.
.0015	.185	.0152	.000541	.0000443	.184	.0152	4.27					3830.	3830.	3830.	3830.	3830.	3830.
.002	.185	.0212	.000718	.0000824	.184	.0211	3.97					1710.	1710.	1710.	1710.	1710.	1710.
.003	.184	.0321	.00107	.000186	.183	.0319	3.41					547.	547.	550.	547.	547.	547.
.004	.183	.0424	.00141	.000326	.182	.0420	2.91					241.	241.	245.	241.	241.	241.
.005	.183	.0516	.00175	.000495	.181	.0511	2.48					129.	129.	132.	129.	129.	129.
.006	.182	.0599	.00208	.000687	.180	.0593	2.12					76.5	76.5	78.7	76.6	76.5	76.5
K .007112	.181	.0683	.00245	.000923	.179	.0674	1.80					47.2	47.2	49.0	47.3	47.2	47.2
.008	.181	.0744	.00274	.00112	.178	.0733	1.58					440.	329.	442.	440.	440.	329.
.01	.180	.0860	.00336	.00162	.176	.0844	1.24					315.	245.	317.	315.	315.	245.
.015	.177	.105	.00487	.00290	.171	.102	.763					169.	139.	170.	169.	169.	139.
.02	.174	.116	.00625	.00420	.167	.112	.528					54.4	48.0	55.3	54.5	54.4	48.0
.03	.167	.129	.00871	.00673	.158	.123	.290					24.3	22.1	24.9	24.4	24.3	22.1
.04	.162	.134	.0108	.00892	.151	.125	.183					7.73	7.27	8.15	7.86	7.74	7.28
.05	.157	.136	.0127	.0110	.144	.125	.126					3.32	3.17	3.63	3.45	3.33	3.18
.06	.153	.136	.0143	.0127	.139	.123	.0931					1.68	1.62	1.94	1.82	1.69	1.63
.08	.144	.134	.0169	.0156	.128	.118	.0561					.960	.931	1.19	1.10	.975	.944
.1	.138	.129	.0191	.0179	.119	.111	.0369					.404	.396	.594	.538	.421	.411
.15	.124	.120	.0225	.0217	.102	.0980	.0171					.204	.201	.370	.333	.223	.219
.2	.114	.111	.0246	.0240	.0893	.0870	.00991					.0591	.0583	.196	.179	.0816	.0800
.3	.0991	.0979	.0267	.0264	.0723	.0715	.00451					.0245	.0243	.146	.136	.0490	.0483
.4	.0887	.0881	.0275	.0272	.0612	.0609	.00255					.00722	.00718	.110	.105	.0340	.0336
.5	.0811	.0805	.0276	.0275	.0534	.0530	.00166					.00327	.00326	.0939	.0913	.0307	.0304
.6	.0749	.0746	.0276	.0274	.0474	.0472	.00116					.00181	.00180	.0840	.0824	.0296	.0293
.8	.0659	.0657	.0270	.0266	.0389	.0390	.000667					.00115	.00115	.0769	.0758	.0288	.0286
1.	.0592	.0591	.0261	.0257	.0332	.0334	.000426					.000582	.000581	.0669	.0662	.0275	.0272
1.5	.0481	.0481	.0238	.0235	.0243	.0246	.000193	.000345		.000345	.000107	.000354	.000353	.0598	.0594	.0264	.0260
2.	.0410	.0410	.0218	.0213	.0193	.0196	.000110	.00133		.00133	.000626	.000162	.000162	.0487	.0486	.0244	.0237
3.	.0322	.0322	.0186	.0180	.0136	.0142	.0000485	.00370	.0000113	.00371	.00235	.000100	.000100	.0425	.0424	.0232	.0221
4.	.0270	.0270	.0164	.0155	.0106	.0113	.0000274	.00605	.0000464	.00609	.00433	.0000539	.0000539	.0360	.0360	.0224	.0204
5.	.0233	.0233	.0147	.0137	.00867	.00957	.0000179	.00806	.0000906	.00815	.00614	.0000359	.0000359	.0331	.0331	.0225	.0199
6.	.0206	.0206	.0133	.0123	.00733	.00830	.0000123	.00981	.000140	.00995	.00778	.0000269	.0000269	.0315	.0315	.0229	.0198
8.	.0168	.0168	.0112	.0102	.00561	.00664		.0126	.000238	.0128	.0104	.0000216	.0000216	.0306	.0305	.0232	.0201
10.	.0143	.0143	.00980	.00860	.00454	.00573		.0151	.000328	.0154	.0127	.0000156	.0000156	.0296	.0296	.0240	.0206
15.	.0106	.0106	.00754	.00636	.00307	.00425		.0195	.000515	.0201	.0162	.0000122	.0000122	.0298	.0298	.0252	.0213
20.	.00852	.00852	.00619	.00501	.00233	.00350		.0226	.000653	.0233	.0181			.0306	.0306	.0276	.0225
30.	.00620	.00620	.00464	.00332	.00156	.00288		.0272	.000870	.0280	.0203			.0318	.0318	.0294	.0231
40.	.00493	.00493	.00374	.00235	.00119	.00258		.0304	.00102	.0314	.0213			.0342	.0342	.0327	.0236
50.	.00412	.00412	.00317	.00178	.000948	.00234		.0328	.00113	.0338	.0216			.0363	.0363	.0351	.0237
60.	.00355	.00355	.00275	.00139	.000793	.00216		.0345	.00122	.0357	.0215			.0379	.0379	.0370	.0233
80.	.00279	.00279	.00220	.000918	.000597	.00188		.0376	.00137	.0384	.0213			.0392	.0392	.0384	.0229
100.	.00232	.00232	.00184	.000667	.000479	.00165		.0393	.00147	.0409	.0211			.0412	.0412	.0405	.0223
														.0431	.0431	.0427	.0218

27 COBALT
(barns/atom)

E (MeV)	KN $\sigma_{inc,t}$	BD $\sigma_{inc,t}$	KN $\sigma_{inc,a}$	BD $\sigma_{inc,a}$	KN $\sigma_{inc,s}$	BD $\sigma_{inc,s}$	σ_{coh}	$\sigma_{x,n}$	$\sigma_{x,e}$	$\sigma_{x,t}$	$\sigma_{x,a}$	$\sigma_{\gamma,t}$	$\sigma_{\gamma,a}$	$\sigma_{tot,t}$	$\sigma_{tot,t-coh}$	$\sigma_{tot,a}$	$\sigma_{tot,en}$
.001	17.9	.713	.0349	.00139	17.9	.712	455.					1300000.	1300000.	1300000.	1300000.	1300000.	1300000.
.0015	17.9	1.27	.0521	.00370	17.8	1.27	430.					413000.	413000.	413000.	413000.	413000.	413000.
.002	17.8	1.81	.0691	.00702	17.7	1.80	402.					185000.	185000.	185000.	185000.	185000.	185000.
.003	17.8	2.85	.103	.0165	17.6	2.83	347.					59200.	59200.	59500.	59200.	59200.	59200.
.004	17.7	3.84	.136	.0295	17.5	3.81	298.					26300.	26300.	26600.	26300.	26300.	26300.
.005	17.6	4.73	.169	.0453	17.4	4.68	255.					13900.	13900.	14200.	13900.	13900.	13900.
.006	17.5	5.53	.201	.0633	17.4	5.47	218.					8360.	8360.	8580.	8370.	8360.	8360.
K .007709	17.4	6.74	.255	.0986	17.2	6.64	170.					4090.	4090.	4270.	4100.	4090.	4090.
.008	17.4	6.92	.264	.105	17.2	6.82	164.					37400.	27200.	37600.	37400.	37400.	27200.
.01	17.3	8.06	.324	.151	17.0	7.91	127.					33800.	24900.	34000.	33800.	33800.	24900.
.015	17.0	9.93	.470	.275	16.5	9.66	78.1					18000.	14200.	18100.	18000.	18000.	14200.
.02	16.7	11.1	.602	.401	16.1	10.7	53.9					5860.	5040.	5950.	5870.	5860.	5040.
.03	16.1	12.3	.839	.640	15.3	11.7	29.8					2620.	2340.	2680.	2630.	2620.	2340.
.04	15.6	12.8	1.04	.854	14.6	11.9	18.7					843.	784.	885.	855.	844.	785.
.05	15.2	13.0	1.22	1.05	13.9	12.0	12.9					360.	341.	391.	373.	361.	342.
.06	14.7	13.0	1.38	1.22	13.4	11.8	9.53					183.	175.	209.	196.	184.	176.
.08	14.0	12.8	1.64	1.50	12.3	11.3	5.73					104.	100.	127.	117.	105.	101.
.1	13.3	12.5	1.84	1.72	11.5	10.8	3.77					44.2	43.0	62.7	57.0	45.8	44.5
.15	12.0	11.6	2.17	2.11	9.80	9.49	1.76					22.1	21.6	38.4	34.6	23.9	23.3
.2	11.0	10.7	2.37	2.31	8.60	8.39	1.01					8.50	8.41	19.9	18.1	8.67	8.52
.3	9.54	9.42	2.57	2.54	6.97	6.88	.461					2.73	2.70	14.4	13.4	5.10	5.01
.4	8.55	8.48	2.65	2.62	5.90	5.86	.261					.800	.794	10.7	10.2	3.37	3.33
.5	7.81	7.76	2.66	2.65	5.14	5.11	.170					.363	.361	9.10	8.84	3.01	2.98
.6	7.22	7.19	2.65	2.64	4.57	4.55	.120					.202	.201	8.13	7.96	2.86	2.85
.8	6.34	6.32	2.59	2.56	3.75	3.76	.0680					.127	.127	7.44	7.32	2.78	2.77
1.	5.70	5.69	2.51	2.47	3.19	3.22	.0436					.0644	.0642	6.45	6.38	2.65	2.62
1.5	4.63	4.63	2.29	2.26	2.34	2.37	.0199	.0347		.0347	.0108	.0397	.0396	5.77	5.73	2.55	2.51
2.	3.95	3.95	2.10	2.05	1.85	1.90	.0112	.133		.133	.0628	.0182	.0182	4.70	4.68	2.34	2.29
3.	3.11	3.11	1.79	1.73	1.31	1.38	.00497	.370	.00108	.371	.236	.0113	.0113	4.11	4.09	2.24	2.12
4.	2.60	2.60	1.58	1.50	1.02	1.10	.00280	.610	.00446	.614	.436	.00608	.00608	3.49	3.49	2.17	1.97
5.	2.24	2.24	1.41	1.31	.835	.925	.00184	.805	.00873	.814	.612	.00407	.00407	3.22	3.22	2.20	1.94
6.	1.98	1.98	1.28	1.18	.706	.804	.00126	.977	.0135	.990	.774	.00309	.00309	3.06	3.06	2.23	1.93
8.	1.62	1.62	1.08	.974	.540	.646		1.25	.0230	1.27	1.03	.00248	.00248	2.97	2.97	2.27	1.96
10.	1.38	1.38	.944	.824	.437	.556		1.50	.0317	1.53	1.26	.00176	.00176	2.89	2.89	2.35	2.01
15.	1.02	1.02	.726	.608	.296	.412		1.95	.0497	2.00	1.62	.00138	.00138	2.91	2.91	2.48	2.09
20.	.821	.821	.596	.479	.224	.342		2.27	.0630	2.33	1.80			3.02	3.02	2.73	2.23
30.	.597	.597	.446	.316	.151	.281		2.71	.0837	2.79	2.01			3.15	3.15	2.93	2.28
40.	.475	.475	.361	.224	.114	.251		3.03	.0988	3.13	2.11			3.39	3.39	3.24	2.33
50.	.396	.396	.305	.169	.0913	.227		3.29	.109	3.40	2.14			3.60	3.60	3.49	2.33
60.	.341	.341	.265	.132	.0764	.209		3.44	.118	3.56	2.12			3.80	3.80	3.70	2.31
80.	.269	.269	.212	.0880	.0575	.181		3.70	.132	3.83	2.11			3.90	3.90	3.83	2.25
100.	.224	.224	.177	.0638	.0461	.160		3.94	.141	4.08	2.09			4.10	4.10	4.04	2.20
														4.30	4.30	4.26	2.15

27 COBALT

(cm^2/g = 0.01022 x barns/atom)

E (MeV)	$(\frac{\mu}{\rho})^{KN}_{inc,t}$	$(\frac{\mu}{\rho})^{BD}_{inc,t}$	$(\frac{\mu}{\rho})^{KN}_{inc,a}$	$(\frac{\mu}{\rho})^{BD}_{inc,a}$	$(\frac{\mu}{\rho})^{KN}_{inc,s}$	$(\frac{\mu}{\rho})^{BD}_{inc,s}$	$(\frac{\mu}{\rho})_{coh}$	$(\frac{\mu}{\rho})_{\kappa_n}$	$(\frac{\mu}{\rho})_{\kappa_e}$	$(\frac{\mu}{\rho})_{\kappa,t}$	$(\frac{\mu}{\rho})_{\kappa,a}$	$(\frac{\mu}{\rho})_{\tau,t}$	$(\frac{\mu}{\rho})_{\tau,a}$	$(\frac{\mu}{\rho})_{tot,t}$	$(\frac{\mu}{\rho})_{tot,t-coh}$	$(\frac{\mu}{\rho})_{tot,a}$	$(\frac{\mu}{\rho})_{tot,en}$
.001	.183	.00729	.000357	.0000142	.183	.00728	4.65					13300.	13300.	13300.	13300.	13300.	13300.
.0015	.183	.0130	.000532	.0000378	.182	.0130	4.39					4220.	4220.	4220.	4220.	4220.	4220.
.002	.182	.0185	.000706	.0000717	.181	.0184	4.11					1890.	1890.	1890.	1890.	1890.	1890.
.003	.182	.0291	.00105	.000169	.180	.0289	3.55					605.	605.	608.	605.	605.	605.
.004	.181	.0392	.00139	.000301	.179	.0389	3.05					269.	269.	272.	269.	269.	269.
.005	.180	.0483	.00173	.000463	.178	.0478	2.61					142.	142.	145.	142.	142.	142.
.006	.179	.0565	.00205	.000647	.178	.0559	2.23					85.4	85.4	87.7	85.5	85.4	85.4
K .007709	.178	.0689	.00261	.00101	.176	.0679	1.74					41.8	41.8	43.6	41.9	41.8	41.8
												382.	278.	384.	382.	382.	278.
.008	.178	.0707	.00270	.00107	.176	.0697	1.68					345.	254.	347.	345.	345.	254.
.01	.177	.0824	.00331	.00154	.174	.0808	1.30					184.	145.	185.	184.	184.	145.
.015	.174	.101	.00480	.00281	.169	.0987	.798					59.9	51.5	60.8	60.0	59.9	51.5
.02	.171	.113	.00615	.00410	.165	.109	.551					26.8	23.9	27.4	26.9	26.8	23.9
.03	.165	.126	.00857	.00654	.156	.120	.305					8.62	8.01	9.04	8.74	8.63	8.02
.04	.159	.131	.0106	.00873	.149	.122	.191					3.68	3.49	4.00	3.81	3.69	3.50
.05	.155	.133	.0125	.0107	.142	.123	.132					1.87	1.79	2.14	2.00	1.88	1.80
.06	.150	.133	.0141	.0125	.137	.121	.0974					1.06	1.02	1.30	1.20	1.07	1.03
.08	.143	.131	.0168	.0153	.126	.115	.0586					.452	.439	.641	.583	.468	.455
.1	.136	.128	.0188	.0176	.118	.110	.0365					.226	.221	.392	.354	.244	.238
.15	.123	.119	.0222	.0216	.100	.0970	.0160					.0664	.0695	.203	.185	.0886	.0871
.2	.112	.109	.0242	.0236	.0879	.0857	.0103					.0279	.0276	.147	.137	.0521	.0512
.3	.0975	.0963	.0263	.0260	.0712	.0703	.00471					.00818	.00811	.109	.104	.0344	.0340
.4	.0874	.0867	.0271	.0268	.0603	.0599	.00267					.00371	.00369	.0930	.0903	.0308	.0305
.5	.0798	.0793	.0272	.0271	.0525	.0522	.00174					.00206	.00205	.0831	.0814	.0292	.0291
.6	.0738	.0735	.0271	.0270	.0467	.0465	.00123					.00130	.00130	.0760	.0748	.0284	.0283
.8	.0648	.0646	.0265	.0262	.0383	.0384	.000695					.000658	.000656	.0659	.0652	.0271	.0268
1.	.0583	.0582	.0257	.0252	.0326	.0329	.000446					.000406	.000405	.0590	.0586	.0261	.0257
1.5	.0473	.0473	.0234	.0231	.0239	.0242	.000203	.000355		.000355	.000110	.000186	.000186	.0480	.0478	.0239	.0234
2.	.0404	.0404	.0215	.0210	.0189	.0194	.000114	.00136		.00136	.000642	.000115	.000115	.0420	.0418	.0229	.0217
3.	.0318	.0318	.0183	.0177	.0134	.0141	.0000508	.00378	.0000110	.00379	.00241	.0000621	.0000621	.0357	.0357	.0222	.0201
4.	.0266	.0266	.0161	.0153	.0104	.0112	.0000286	.00623	.0000456	.00628	.00446	.0000416	.0000416	.0329	.0329	.0225	.0198
5.	.0229	.0229	.0144	.0134	.00853	.00945	.0000188	.00823	.0000892	.00832	.00625	.0000316	.0000316	.0313	.0313	.0228	.0197
6.	.0202	.0202	.0131	.0121	.00722	.00822	.0000129	.00998	.000138	.0101	.00791	.0000253	.0000253	.0304	.0304	.0232	.0200
8.	.0166	.0166	.0110	.00995	.00552	.00660		.0128	.000235	.0130	.0105	.0000180	.0000180	.0295	.0295	.0240	.0205
10.	.0141	.0141	.00965	.00842	.00447	.00568		.0153	.000324	.0156	.0129	.0000141	.0000141	.0297	.0297	.0253	.0214
15.	.0104	.0104	.00742	.00621	.00303	.00421		.0199	.000508	.0204	.0166			.0309	.0309	.0279	.0228
20.	.00839	.00839	.00609	.00490	.00229	.00350		.0232	.000644	.0238	.0184			.0322	.0322	.0299	.0233
30.	.00610	.00610	.00456	.00323	.00154	.00287		.0277	.000855	.0285	.0205			.0346	.0346	.0331	.0238
40.	.00485	.00485	.00369	.00229	.00117	.00257		.0310	.00101	.0320	.0216			.0366	.0368	.0357	.0238
50.	.00405	.00405	.00312	.00173	.000933	.00232		.0336	.00111	.0347	.0219			.0388	.0388	.0378	.0236
60.	.00349	.00349	.00271	.00135	.000781	.00214		.0352	.00121	.0364	.0217			.0399	.0399	.0391	.0230
80.	.00275	.00275	.00217	.000899	.000588	.00185		.0378	.00135	.0391	.0216			.0419	.0419	.0413	.0225
100.	.00229	.00229	.00181	.000652	.000471	.00164		.0403	.00144	.0417	.0214			.0439	.0439	.0435	.0220

28 NICKEL
(barns/atom)

E (MeV)	$\sigma^{KN}_{inc,t}$	$\sigma^{BD}_{inc,t}$	$\sigma^{KN}_{inc,a}$	$\sigma^{BD}_{inc,a}$	$\sigma^{KN}_{inc,s}$	$\sigma^{BD}_{inc,s}$	σ_{coh}	$\sigma_{\kappa n}$	$\sigma_{\kappa e}$	$\sigma_{\kappa,t}$	$\sigma_{\kappa,a}$	$\sigma_{r,t}$	$\sigma_{r,a}$	$\sigma_{tot,t}$	$\sigma_{tot,t-coh}$	$\sigma_{tot,a}$	$\sigma_{tot,en}$
.001	18.6	.640	.0361	.00125	18.5	.639	492.					1320000.	1320000.	1320000.	1320000.	1320000.	1320000.
L_I .001008	18.6	.648	.0365	.00127	18.5	.647	491.					1310000.	1310000.	1310000.	1310000.	1310000.	1310000.
												1470000.	1470000.	1470000.	1470000.	1470000.	1470000.
.0015	18.5	1.17	.0540	.00341	18.5	1.17	466.					481000.	481000.	481000.	481000.	481000.	481000.
.002	18.5	1.70	.0717	.0066	18.4	1.69	437.					215000.	215000.	215000.	215000.	215000.	215000.
.003	18.4	2.76	.107	.0160	18.3	2.74	380.					69200.	69200.	69600.	69200.	69200.	69200.
.004	18.3	3.77	.141	.0290	18.2	3.74	327.					30900.	30900.	31200.	30900.	30900.	30900.
.005	18.3	4.68	.175	.0448	18.1	4.64	281.					16400.	16400.	16700.	16400.	16400.	16400.
.006	18.2	5.50	.208	.063	18.0	5.44	242.					9850.	9850.	10100.	9860.	9850.	9850.
.008	18.1	6.95	.273	.105	17.8	6.84	182.					4330.	4330.	4520.	4340.	4330.	4330.
K .008332	18.0	7.16	.284	.113	17.8	7.05	174.					3840.	3840.	4020.	3850.	3840.	3840.
												34400.	24200.	34600.	34400.	34400.	24200.
.01	17.9	8.13	.336	.152	17.6	7.98	141.					20600.	15500.	20700.	20600.	20600.	15500.
.015	17.6	10.1	.487	.279	17.1	9.82	85.9					6700.	5600.	6800.	6710.	6700.	5600.
.02	17.3	11.4	.624	.411	16.7	11.0	59.2					3000.	2630.	3070.	3010.	3000.	2630.
.03	16.7	12.7	.871	.661	15.9	12.0	32.8					958.	879.	1000.	971.	959.	880.
.04	16.2	13.2	1.08	.880	15.1	12.3	20.6					418.	392.	452.	431.	419.	393.
.05	15.7	13.4	1.27	1.08	14.5	12.3	14.3					213.	202.	241.	226.	214.	203.
.06	15.3	13.5	1.43	1.27	13.8	12.2	10.5					122.	117.	146.	136.	123.	118.
.08	14.5	13.2	1.70	1.55	12.8	11.7	6.31					51.4	49.8	70.9	64.6	53.1	51.3
.1	13.8	12.9	1.90	1.78	11.9	11.1	4.15					26.2	25.6	43.3	39.1	28.1	27.4
.15	12.4	12.0	2.25	2.18	10.2	9.82	1.94					7.67	7.54	21.6	19.7	9.92	9.72
.2	11.4	11.1	2.46	2.40	8.92	8.70	1.11					3.21	3.17	15.4	14.3	5.67	5.57
.3	9.90	9.76	2.67	2.63	7.23	7.13	.507					.940	.932	11.2	10.7	3.61	3.56
.4	8.86	8.79	2.75	2.72	6.12	6.07	.288					.430	.427	9.51	9.22	3.18	3.15
.5	8.09	8.05	2.76	2.75	5.33	5.30	.187					.240	.239	8.48	8.29	3.00	2.99
.6	7.49	7.45	2.75	2.73	4.74	4.72	.131					.151	.150	7.73	7.60	2.90	2.88
.8	6.58	6.56	2.69	2.66	3.89	3.90	.0747					.0773	.0771	6.71	6.64	2.77	2.74
1.	5.91	5.90	2.60	2.56	3.31	3.34	.0479					.0475	.0474	6.00	5.95	2.65	2.61
1.5	4.80	4.80	2.38	2.34	2.43	2.46	.0217	.0375		.0375	.0116	.0221	.0221	4.88	4.86	2.44	2.37
2.	4.10	4.09	2.17	2.12	1.92	1.97	.0123	.144		.144	.0680	.0135	.0135	4.26	4.25	2.33	2.20
3.	3.22	3.22	1.86	1.78	1.36	1.44	.00547	.399	.00113	.400	.254	.00730	.00729	3.63	3.63	2.27	2.04
4.	2.69	2.69	1.63	1.55	1.06	1.14	.00308	.655	.00461	.660	.468	.00492	.00492	3.36	3.35	2.29	2.02
5.	2.33	2.33	1.46	1.37	.865	.965	.00202	.866	.00905	.875	.657	.00374	.00374	3.21	3.21	2.34	2.03
6.	2.06	2.06	1.32	1.22	.732	.840	.00140	1.05	.0141	1.06	.830	.00300	.00300	3.12	3.12	2.38	2.05
8.	1.68	1.68	1.12	1.01	.560	.674		1.35	.0239	1.37	1.11	.00214	.00214	3.05	3.05	2.49	2.12
10.	1.43	1.43	.979	.848	.453	.582		1.61	.0329	1.64	1.35	.00167	.00167	3.07	3.07	2.62	2.20
15.	1.06	1.06	.753	.625	.307	.435		2.10	.0516	2.15	1.73	.00111	.00111	3.21	3.21	2.90	2.36
20.	.851	.851	.618	.492	.233	.359		2.44	.0654	2.51	1.92			3.36	3.36	3.13	2.41
30.	.619	.619	.463	.323	.157	.296		2.91	.0869	3.00	2.14			3.62	3.62	3.46	2.46
40.	.492	.492	.374	.230	.118	.262		3.26	.102	3.36	2.25			3.85	3.85	3.73	2.48
50.	.411	.411	.316	.173	.0946	.238		3.52	.113	3.63	2.27			4.04	4.04	3.95	2.44
60.	.354	.354	.275	.135	.0792	.219		3.70	.122	3.82	2.25			4.17	4.17	4.09	2.38
80.	.279	.279	.220	.0904	.0596	.189		3.99	.136	4.13	2.25			4.41	4.41	4.35	2.34
100.	.232	.232	.184	.0654	.0478	.167		4.24	.146	4.39	2.22			4.62	4.62	4.57	2.29

28 NICKEL

(cm^2/g = 0.01026 x barns/atom)

E (MeV)	$(\frac{\mu}{\rho})^{KN}_{inc,t}$	$(\frac{\mu}{\rho})^{BD}_{inc,t}$	$(\frac{\mu}{\rho})^{KN}_{inc,a}$	$(\frac{\mu}{\rho})^{BD}_{inc,a}$	$(\frac{\mu}{\rho})^{KN}_{inc,s}$	$(\frac{\mu}{\rho})^{BD}_{inc,s}$	$(\frac{\mu}{\rho})_{coh}$	$(\frac{\mu}{\rho})_{\kappa n}$	$(\frac{\mu}{\rho})_{\kappa e}$	$(\frac{\mu}{\rho})_{\kappa,t}$	$(\frac{\mu}{\rho})_{\kappa,a}$	$(\frac{\mu}{\rho})_{\tau,t}$	$(\frac{\mu}{\rho})_{\tau,a}$	$(\frac{\mu}{\rho})_{tot,t}$	$(\frac{\mu}{\rho})_{tot,t-coh}$	$(\frac{\mu}{\rho})_{tot,a}$	$(\frac{\mu}{\rho})_{tot,en}$
.001	.191	.00657	.000370	.0000128	.190	.00656	5.05					13500.	13500.	13500.	13500.	13500.	13500.
L_I .001008	.191	.00665	.000374	.0000130	.190	.00664	5.04					13400.	13400.	13400.	13400.	13400.	13400.
												15100.	15100.	15100.	15100.	15100.	15100.
.0015	.190	.0120	.000554	.0000350	.190	.0120	4.78					4940.	4940.	4940.	4940.	4940.	4940.
.002	.190	.0174	.000736	.0000677	.189	.0173	4.48					2210.	2210.	2210.	2210.	2210.	2210.
.003	.189	.0283	.00110	.000164	.188	.0281	3.90					710.	710.	714.	710.	710.	710.
.004	.188	.0387	.00145	.000298	.187	.0384	3.36					317.	317.	320.	317.	317.	317.
.005	.188	.0480	.00180	.000460	.186	.0476	2.88					168.	168.	171.	168.	168.	168.
.006	.187	.0564	.00213	.000646	.185	.0558	2.48					101.	101.	104.	101.	101.	101.
.008	.186	.0713	.00280	.00108	.183	.0702	1.87					44.4	44.4	46.4	44.5	44.4	44.4
K .008332	.185	.0735	.00291	.00116	.183	.0723	1.79					39.4	39.4	41.2	39.5	39.4	39.4
												353.	248.	355.	353.	353.	248.
.01	.184	.0834	.00345	.00156	.181	.0819	1.45					211.	159.	212.	211.	211.	159.
.015	.181	.104	.00500	.00286	.175	.101	.881					68.7	57.5	69.8	68.8	68.7	57.5
.02	.177	.117	.00640	.00422	.171	.113	.607					30.8	27.0	31.5	30.9	30.8	27.0
.03	.171	.130	.00894	.00678	.163	.123	.337					9.83	9.02	10.3	9.96	9.84	9.03
.04	.166	.135	.0111	.00903	.155	.126	.211					4.29	4.02	4.64	4.42	4.30	4.03
.05	.161	.137	.0130	.0111	.149	.126	.147					2.19	2.07	2.47	2.32	2.20	2.08
.06	.157	.139	.0147	.0130	.142	.125	.108					1.25	1.20	1.50	1.40	1.26	1.21
.08	.149	.135	.0174	.0159	.131	.120	.0647					.527	.511	.727	.663	.545	.526
.1	.142	.132	.0195	.0183	.122	.114	.0426					.269	.263	.444	.401	.288	.281
.15	.127	.123	.0231	.0224	.105	.101	.0199					.0787	.0774	.222	.202	.102	.0997
.2	.117	.114	.0252	.0246	.0915	.0893	.0114					.0329	.0325	.158	.147	.0582	.0571
.3	.102	.100	.0274	.0270	.0742	.0732	.00520					.00964	.00956	.115	.110	.0370	.0365
.4	.0909	.0902	.0282	.0279	.0628	.0623	.00295					.00441	.00438	.0976	.0946	.0326	.0323
.5	.0830	.0826	.0283	.0282	.0547	.0544	.00192					.00246	.00245	.0870	.0851	.0308	.0307
.6	.0768	.0764	.0282	.0280	.0486	.0484	.00134					.00155	.00154	.0793	.0780	.0298	.0295
.8	.0675	.0673	.0276	.0273	.0399	.0400	.000766					.000793	.000791	.0688	.0681	.0284	.0281
1.	.0606	.0605	.0267	.0263	.0340	.0343	.000491					.000487	.000486	.0616	.0610	.0272	.0268
1.5	.0492	.0492	.0244	.0240	.0249	.0252	.000223	.000385		.000385	.000119	.000227	.000227	.0501	.0499	.0250	.0243
2.	.0421	.0420	.0223	.0218	.0197	.0202	.000126	.00148		.00148	.000698	.000139	.000139	.0437	.0436	.0239	.0226
3.	.0330	.0330	.0191	.0183	.0140	.0148	.0000561	.00409	.0000116	.00410	.00261	.0000749	.0000748	.0372	.0372	.0233	.0209
4.	.0276	.0276	.0167	.0159	.0109	.0117	.0000316	.00672	.0000473	.00677	.00480	.0000505	.0000505	.0345	.0344	.0235	.0207
5.	.0239	.0239	.0150	.0141	.00887	.00990	.0000207	.00889	.0000929	.00898	.00674	.0000384	.0000384	.0329	.0329	.0240	.0208
6.	.0211	.0211	.0135	.0125	.00751	.00862	.0000144	.0108	.000145	.0109	.00852	.0000308	.0000308	.0320	.0320	.0244	.0210
8.	.0172	.0172	.0115	.0104	.00575	.00692		.0139	.000245	.0141	.0114	.0000220	.0000220	.0313	.0313	.0255	.0218
10.	.0147	.0147	.0100	.00870	.00465	.00597		.0165	.000338	.0168	.0139	.0000171	.0000171	.0319	.0315	.0269	.0226
15.	.0109	.0109	.00773	.00641	.00315	.00446		.0215	.000529	.0221	.0177	.0000114	.0000114	.0329	.0329	.0298	.0242
20.	.00873	.00873	.00634	.00505	.00239	.00368		.0250	.000671	.0258	.0197			.0345	.0345	.0321	.0247
30.	.00635	.00635	.00475	.00331	.00161	.00304		.0299	.000892	.0308	.0220			.0371	.0371	.0355	.0252
40.	.00505	.00505	.00384	.00236	.00121	.00269		.0334	.00105	.0345	.0231			.0395	.0395	.0383	.0254
50.	.00422	.00422	.00324	.00177	.000971	.00244		.0361	.00116	.0372	.0233			.0415	.0415	.0405	.0250
60.	.00363	.00363	.00282	.00139	.000813	.00225		.0380	.00125	.0392	.0231			.0428	.0428	.0420	.0244
80.	.00286	.00286	.00226	.000928	.000611	.00194		.0409	.00140	.0424	.0231			.0452	.0452	.0446	.0240
100.	.00238	.00238	.00189	.000671	.000490	.00171		.0435	.00150	.0450	.0228			.0474	.0474	.0469	.0235

29 COPPER
(barns/atom)

E (MeV)	$\sigma^{KN}_{inc,t}$	$\sigma^{BD}_{inc,t}$	$\sigma^{KN}_{inc,a}$	$\sigma^{BD}_{inc,a}$	$\sigma^{KN}_{inc,s}$	$\sigma^{BD}_{inc,s}$	σ_{coh}	$\sigma_{\gamma n}$	$\sigma_{\gamma e}$	$\sigma_{\gamma,t}$	$\sigma_{\gamma,a}$	$\sigma_{\gamma,t}$	$\sigma_{\gamma,a}$	$\sigma_{tot,t}$	$\sigma_{tot,t-coh}$	$\sigma_{tot,a}$	$\sigma_{tot,en}$
.001	19.2	.629	.0374	.00123	19.2	.628	532.					1460000.	1460000.	1460000.	1460000.	1460000.	1460000.
L_I .001096	19.2	.726	.0410	.00155	19.2	.724	528.					1190000.	1190000.	1190000.	1190000.	1190000.	1190000.
.0015	19.2	1.15	.0559	.00335	19.1	1.15	508.					1340000.	1340000.	1340000.	1340000.	1340000.	1340000.
.002	19.1	1.69	.0743	.00656	19.1	1.68	481.					553000.	553000.	554000.	553000.	553000.	553000.
.003	19.1	2.73	.111	.0158	19.0	2.71	422.					248000.	248000.	248000.	248000.	248000.	248000.
.004	19.0	3.73	.146	.0287	18.8	3.70	365.					80100.	80100.	80500.	80100.	80100.	80100.
.005	18.9	4.65	.181	.0445	18.7	4.61	315.					35800.	35800.	36200.	35800.	35800.	35800.
.006	18.8	5.49	.216	.0629	18.6	5.43	271.					19000.	19000.	19300.	19000.	19000.	19000.
.008	18.7	6.97	.283	.106	18.4	6.86	203.					11400.	11400.	11700.	11400.	11400.	11400.
K .008981	18.6	7.60	.315	.129	18.3	7.47	179.					5050.	5050.	5260.	5060.	5050.	5050.
.01	18.6	8.20	.348	.154	18.2	8.05	158.					3610.	3610.	3800.	3620.	3610.	3610.
.015	18.2	10.3	.504	.285	17.7	10.0	95.3					31700.	21500.	31900.	31700.	31700.	21500.
.02	17.9	11.6	.646	.419	17.3	11.2	65.4					23400.	16600.	23600.	23400.	23400.	16600.
.03	17.3	13.0	.902	.677	16.4	12.3	36.2					7600.	6140.	7710.	7610.	7600.	6140.
.04	16.8	13.6	1.12	.907	15.7	12.7	22.8					3410.	2920.	3490.	3420.	3410.	2920.
.05	16.3	13.9	1.31	1.12	15.0	12.8	15.7					1100.	994.	1150.	1110.	1100.	995.
.06	15.8	13.9	1.48	1.30	14.3	12.6	11.6					479.	444.	515.	493.	480.	445.
.08	15.0	13.7	1.76	1.60	13.2	12.1	6.95					244.	230.	274.	258.	245.	231.
.1	14.3	13.3	1.97	1.84	12.3	11.5	4.58					141.	134.	166.	155.	142.	135.
.15	12.9	12.4	2.33	2.25	10.5	10.1	2.13					59.7	57.5	80.3	73.4	61.5	59.1
.2	11.8	11.5	2.55	2.49	9.24	9.01	1.23					30.5	29.6	48.4	43.8	32.5	31.4
.3	10.2	10.1	2.76	2.72	7.49	7.38	.558					8.91	8.74	23.4	21.3	11.2	11.0
.4	9.18	9.1	2.84	2.81	6.34	6.29	.317					3.77	3.72	16.5	15.3	6.32	6.21
.5	8.38	8.33	2.86	2.85	5.52	5.48	.206					1.10	1.09	11.8	11.2	3.86	3.81
.6	7.76	7.72	2.85	2.83	4.91	4.89	.144					.506	.502	9.92	9.61	3.35	3.31
.8	6.81	6.79	2.79	2.75	4.03	4.04	.0814					.282	.280	8.82	8.61	3.14	3.13
1.	6.12	6.11	2.69	2.65	3.43	3.46	.0523					.180	.179	8.04	7.90	3.03	3.01
1.5	4.98	4.97	2.46	2.42	2.51	2.55	.0237	.0406		.0406	.0126	.0920	.0917	6.96	6.88	2.88	2.84
2.	4.24	4.24	2.25	2.20	1.99	2.04	.0134	.155		.155	.0732	.0570	.0568	6.22	6.17	2.75	2.71
3.	3.34	3.34	1.93	1.85	1.41	1.49	.00599	.430	.00117	.431	.273	.0267	.0266	5.06	5.04	2.53	2.46
4.	2.79	2.79	1.69	1.60	1.18	1.19	.00340	.703	.00480	.708	.501	.0161	.0161	4.42	4.41	2.42	2.29
5.	2.41	2.41	1.51	1.41	.896	1.00	.00224	.930	.00938	.939	.705	.00870	.00869	3.79	3.78	2.37	2.13
6.	2.13	2.13	1.37	1.26	.758	.873	.00155	1.13	.0146	1.14	.893	.00590	.00590	3.51	3.50	2.40	2.11
8.	1.74	1.74	1.16	1.04	.580	.699		1.45	.0247	1.47	1.19	.00450	.00450	3.36	3.35	2.45	2.12
10.	1.48	1.48	1.01	.873	.470	.607		1.72	.0360	1.75	1.43	.00362	.00362	3.28	3.27	2.51	2.14
15.	1.10	1.10	.780	.645	.318	.455		2.25	.0534	2.30	1.84	.00260	.00260	3.21	3.21	2.63	2.23
20.	.881	.881	.640	.503	.241	.378		2.60	.0677	2.67	2.03	.00200	.00200	3.23	3.23	2.76	2.30
30.	.641	.641	.479	.332	.162	.309		3.12	.0899	3.21	2.29	.00129	.00129	3.40	3.40	3.08	2.49
40.	.510	.510	.387	.236	.122	.274		3.50	.106	3.61	2.39	.00100	.00100	3.55	3.55	3.31	2.53
50.	.426	.426	.328	.178	.0980	.248		3.77	.117	3.89	2.40			3.85	3.85	3.69	2.62
60.	.367	.367	.285	.139	.0820	.228		3.96	.126	4.09	2.39			4.12	4.12	4.00	2.63
80.	.289	.289	.227	.0928	.0617	.196		4.28	.140	4.42	2.38			4.32	4.32	4.22	2.58
100.	.240	.240	.191	.0670	.0495	.173		4.53	.151	4.68	2.34			4.46	4.46	4.38	2.53
														4.71	4.71	4.65	2.47
														4.92	4.92	4.87	2.41

29 COPPER
(cm^2/g = 0.009478 x barns/atom)

E (MeV)	$(\frac{\mu}{\rho})^{KN}_{inc,t}$	$(\frac{\mu}{\rho})^{BD}_{inc,t}$	$(\frac{\mu}{\rho})^{KN}_{inc,a}$	$(\frac{\mu}{\rho})^{BD}_{inc,a}$	$(\frac{\mu}{\rho})^{KN}_{inc,s}$	$(\frac{\mu}{\rho})^{BD}_{inc,s}$	$(\frac{\mu}{\rho})_{coh}$	$(\frac{\mu}{\rho})_{\kappa n}$	$(\frac{\mu}{\rho})_{\kappa e}$	$(\frac{\mu}{\rho})_{\kappa,t}$	$(\frac{\mu}{\rho})_{\kappa,a}$	$(\frac{\mu}{\rho})_{\tau,t}$	$(\frac{\mu}{\rho})_{\tau,a}$	$(\frac{\mu}{\rho})_{tot,t}$	$(\frac{\mu}{\rho})_{tot,t-coh}$	$(\frac{\mu}{\rho})_{tot,a}$	$(\frac{\mu}{\rho})_{tot,en}$
.001	.182	.00596	.000354	.0000117	.182	.00595	5.04					13800.	13800.	13800.	13800.	13800.	13800.
L_I .001096	.182	.00688	.000389	.0000147	.182	.00686	5.00					11300.	11300.	11300.	11300.	11300.	11300.
												12700.	12700.	12700.	12700.	12700.	12700.
.0015	.182	.0109	.000530	.0000318	.181	.0109	4.81					5240.	5240.	5250.	5240.	5240.	5240.
.002	.181	.0160	.000704	.0000622	.181	.0159	4.56					2350.	2350.	2350.	2350.	2350.	2350.
.003	.181	.0259	.00105	.000150	.180	.0257	4.00					759.	759.	763.	759.	759.	759.
.004	.180	.0354	.00138	.000272	.178	.0351	3.46					339.	339.	343.	339.	339.	339.
.005	.179	.0441	.00172	.000422	.177	.0437	2.99					180.	180.	183.	180.	180.	180.
.006	.178	.0520	.00205	.000596	.176	.0515	2.57					108.	108.	111.	108.	108.	108.
.008	.177	.0661	.00268	.00100	.174	.0650	1.92					47.9	47.9	49.9	48.0	47.9	47.9
K .008981	.176	.0720	.00299	.00122	.173	.0708	1.70					34.2	34.2	36.0	34.3	34.2	34.2
												300.	204.	302.	300.	300.	204.
.01	.176	.0777	.00330	.00146	.172	.0763	1.50					222.	157.	224.	222.	222.	157.
.015	.172	.0976	.00478	.00270	.168	.0948	.903					72.0	58.2	73.1	72.1	72.0	58.2
.02	.170	.110	.00612	.00397	.164	.106	.620					32.3	27.7	33.1	32.4	32.3	27.7
.03	.164	.123	.00855	.00642	.155	.117	.343					10.4	9.42	10.9	10.5	10.4	9.43
.04	.159	.129	.0106	.0086	.149	.120	.216					4.56	4.21	4.88	4.67	4.55	4.22
.05	.154	.132	.0124	.0106	.142	.121	.149					2.31	2.18	2.40	2.45	2.32	2.19
.06	.150	.132	.0140	.0123	.136	.119	.110					1.34	1.27	1.57	1.47	1.35	1.28
.08	.142	.130	.0167	.0152	.125	.115	.0659					.566	.545	.761	.696	.583	.560
.1	.136	.126	.0187	.0174	.117	.109	.0434					.289	.281	.459	.415	.308	.298
.15	.122	.118	.0221	.0213	.0995	.0957	.0202					.0844	.0828	.222	.202	.106	.104
.2	.112	.109	.0242	.0236	.0876	.0854	.0117					.0357	.0353	.156	.145	.0599	.0589
.3	.0947	.0957	.0262	.0258	.0710	.0699	.00529					.0104	.0103	.112	.106	.0366	.0361
.4	.0870	.0862	.0269	.0266	.0601	.0596	.00300					.00480	.00476	.0940	.0911	.0318	.0314
.5	.0794	.0790	.0271	.0270	.0523	.0519	.00195					.00267	.00265	.0836	.0816	.0298	.0297
.6	.0735	.0732	.0270	.0268	.0465	.0463	.00136					.00171	.00170	.0762	.0749	.0287	.0285
.8	.0645	.0644	.0264	.0261	.0382	.0383	.000772					.000872	.000869	.0660	.0652	.0273	.0269
1.	.0580	.0579	.0255	.0251	.0325	.0328	.000496					.000540	.000538	.0590	.0585	.0261	.0257
1.5	.0472	.0471	.0233	.0229	.0238	.0242	.000225	.000385		.000385	.000119	.000253	.000252	.0480	.0478	.0240	.0233
2.	.0402	.0402	.0213	.0209	.0189	.0193	.000127	.00147		.00147	.000694	.000153	.000153	.0419	.0418	.0229	.0217
3.	.0317	.0317	.0183	.0175	.0134	.0141	.0000568	.00408	.0000111	.00409	.00259	.0000825	.0000824	.0359	.0358	.0225	.0202
4.	.0264	.0264	.0160	.0152	.0104	.0113	.0000322	.00666	.0000455	.00671	.00475	.0000559	.0000559	.0333	.0332	.0227	.0200
5.	.0228	.0228	.0143	.0134	.00849	.00948	.0000212	.00881	.0000889	.00890	.00668	.0000427	.0000427	.0318	.0318	.0232	.0201
6.	.0202	.0202	.0130	.0119	.00718	.00827	.0000147	.0107	.000138	.0108	.00846	.0000343	.0000343	.0311	.0310	.0238	.0205
8.	.0165	.0165	.0110	.00986	.00550	.00663		.0137	.000234	.0139	.0113	.0000246	.0000246	.0304	.0304	.0249	.0211
10.	.0140	.0140	.00957	.00827	.00445	.00575		.0163	.000322	.0166	.0136	.0000190	.0000190	.0306	.0306	.0262	.0218
15.	.0104	.0104	.00739	.00611	.00301	.00431		.0213	.000506	.0218	.0174	.0000122	.0000122	.0322	.0322	.0292	.0236
20.	.00835	.00835	.00607	.00477	.00228	.00358		.0246	.000642	.0253	.0192	.00000950	.00000950	.0336	.0336	.0314	.0240
30.	.00608	.00608	.00454	.00315	.00154	.00293		.0296	.000852	.0304	.0217			.0369	.0365	.0350	.0248
40.	.00483	.00483	.00367	.00224	.00116	.00260		.0332	.00100	.0342	.0227			.0390	.0390	.0379	.0249
50.	.00404	.00404	.00311	.00169	.000929	.00235		.0357	.00111	.0369	.0227			.0409	.0409	.0400	.0245
60.	.00348	.00348	.00270	.00132	.000777	.00216		.0375	.00119	.0388	.0227			.0423	.0423	.0415	.0240
80.	.00274	.00274	.00215	.000880	.000585	.00186		.0406	.00133	.0419	.0226			.0446	.0446	.0441	.0234
100.	.00227	.00227	.00181	.000635	.000469	.00164		.0429	.00143	.0444	.0222			.0466	.0466	.0462	.0228

30 ZINC
(barns/atom)

E (MeV)	KN $\sigma_{inc,t}$	BD $\sigma_{inc,t}$	KN $\sigma_{inc,a}$	BD $\sigma_{inc,a}$	KN $\sigma_{inc,s}$	BD $\sigma_{inc,s}$	σ_{coh}	$\sigma_{\gamma n}$	$\sigma_{\gamma e}$	$\sigma_{\gamma,t}$	$\sigma_{\gamma,a}$	$\sigma_{\gamma,t}$	$\sigma_{\gamma,a}$	$\sigma_{tot,t}$	$\sigma_{tot,t-coh}$	$\sigma_{tot,a}$	$\sigma_{tot,en}$
.001	19.9	.714	.0387	.00139	19.8	.713	569.					222000.	222000.	223000.	222000.	222000.	222000.
L_{III} .001020	19.9	.736	.0395	.00146	19.8	.735	568.					212000.	212000.	213000.	212000.	212000.	212000.
												1190000.	1190000.	1190000.	1190000.	1190000.	1190000.
L_{II} .001043	19.9	.763	.0404	.00155	19.8	.761	566.					1050000.	1050000.	1050000.	1050000.	1050000.	1050000.
												1450000.	1450000.	1450000.	1450000.	1450000.	1450000.
L_{I} .001193	19.9	.937	.0461	.00218	19.8	.935	559.					1070000.	1070000.	1070000.	1070000.	1070000.	1070000.
												1210000.	1210000.	1210000.	1210000.	1210000.	1210000.
.0015	19.8	1.29	.0579	.00376	19.8	1.29	542.					639000.	639000.	640000.	639000.	639000.	639000.
.002	19.8	1.84	.0768	.00714	19.7	1.83	512.					284000.	284000.	285000.	284000.	284000.	284000.
.003	19.7	2.87	.114	.0166	19.6	2.85	449.					92500.	92500.	93000.	92500.	92500.	92500.
.004	19.6	3.84	.151	.0295	19.5	3.81	391.					41600.	41600.	42000.	41600.	41600.	41600.
.005	19.6	4.75	.187	.0455	19.4	4.70	338.					22100.	22100.	22400.	22100.	22100.	22100.
.006	19.5	5.59	.223	.0640	19.3	5.53	293.					13200.	13200.	13500.	13200.	13200.	13200.
.008	19.4	7.07	.293	.107	19.1	6.96	222.					5840.	5840.	6070.	5850.	5840.	5840.
K .009659	19.2	8.12	.349	.147	18.9	7.97	179.					3390.	3390.	3580.	3400.	3390.	3390.
												29300.	19200.	29500.	29300.	29300.	19200.
.01	19.2	8.32	.360	.156	18.9	8.16	172.					26400.	17600.	26600.	26400.	26400.	17600.
.015	18.9	10.5	.522	.290	18.3	10.2	104.					8600.	6690.	8710.	8610.	8600.	6690.
.02	18.5	11.9	.669	.429	17.9	11.5	71.2					3880.	3230.	3960.	3890.	3880.	3230.
.03	17.9	13.4	.933	.697	17.0	12.7	39.6					1240.	1100.	1290.	1250.	1240.	1100.
.04	17.4	14.0	1.16	.934	16.2	13.1	24.9					543.	498.	582.	557.	544.	499.
.05	16.8	14.3	1.36	1.15	15.5	13.1	17.2					282.	263.	313.	296.	283.	264.
.06	16.4	14.3	1.54	1.34	14.8	13.0	12.6					163.	154.	190.	177.	165.	155.
.08	15.5	14.1	1.82	1.65	13.7	12.4	7.59					69.0	66.1	90.7	83.1	70.8	67.7
.1	14.8	13.8	2.04	1.90	12.7	11.9	5.00					35.2	34.0	54.0	49.0	37.2	35.9
.15	13.3	12.8	2.41	2.32	10.9	10.5	2.33					10.4	10.2	25.5	23.2	12.8	12.5
.2	12.2	11.9	2.64	2.57	9.56	9.33	1.34					4.37	4.30	17.6	16.3	7.01	6.87
.3	10.6	10.5	2.86	2.83	7.75	7.67	.609					1.30	1.29	12.4	11.8	4.16	4.12
.4	9.5	9.41	2.94	2.91	6.56	6.50	.345					.597	.592	10.4	10.0	3.54	3.50
.5	8.67	8.62	2.96	2.95	5.71	5.67	.225					.335	.333	9.18	8.95	3.29	3.28
.6	8.02	7.98	2.95	2.92	5.08	5.06	.157					.212	.211	8.35	8.19	3.16	3.13
.8	7.05	7.03	2.88	2.85	4.17	4.18	.0890					.107	.107	7.23	7.14	2.99	2.96
1.	6.34	6.32	2.79	2.74	3.55	3.58	.0570					.0678	.0676	6.44	6.39	2.86	2.81
1.5	5.15	5.14	2.55	2.50	2.60	2.64	.0259	.0438		.0438	.0136	.0312	.0311	5.24	5.21	2.62	2.54
2.	4.39	4.39	2.33	2.27	2.06	2.12	.0147	.167		.167	.0788	.0188	.0188	4.59	4.58	2.52	2.37
3.	3.45	3.45	1.99	1.90	1.46	1.55	.00651	.460	.00121	.461	.292	.0103	.0103	3.93	3.92	2.46	2.20
4.	2.89	2.89	1.75	1.66	1.13	1.23	.00370	.753	.00496	.758	.537	.00703	.00702	3.66	3.66	2.32	2.20
5.	2.49	2.49	1.57	1.45	.927	1.04	.00244	1.00	.00972	1.01	.756	.00530	.00530	3.51	3.51	2.39	2.21
6.	2.20	2.20	1.42	1.30	.784	.904	.00170	1.21	.0151	1.23	.956	.00420	.00420	3.44	3.43	2.65	2.26
8.	1.80	1.80	1.20	1.07	.600	.727		1.54	.0256	1.57	1.26	.00301	.00301	3.37	3.37	2.77	2.33
10.	1.53	1.53	1.05	.900	.486	.630		1.85	.0353	1.89	1.53	.00232	.00232	3.42	3.42	2.94	2.43
15.	1.14	1.14	.806	.662	.329	.478		2.40	.0552	2.46	1.96	.00150	.00150	3.60	3.60	3.27	2.62
20.	.912	.912	.662	.518	.249	.394		2.80	.0702	2.87	2.18	.00115	.00115	3.78	3.78	3.53	2.70
30.	.664	.664	.496	.340	.168	.324		3.34	.0930	3.43	2.43			4.09	4.09	3.93	2.77
40.	.527	.527	.401	.242	.127	.285		3.73	.109	3.84	2.53			4.37	4.37	4.24	2.77
50.	.440	.448	.339	.182	.101	.258		4.02	.121	4.14	2.54			4.58	4.58	4.48	2.72
60.	.379	.379	.294	.143	.0849	.236		4.24	.130	4.37	2.53			4.75	4.75	4.66	2.67
80.	.299	.299	.235	.0954	.0639	.204		4.58	.145	4.72	2.53			5.02	5.02	4.95	2.63
100.	.248	.248	.197	.0687	.0512	.179		4.85	.156	5.01	2.48			5.26	5.26	5.21	2.55

30 ZINC

(cm^2/g = 0.009213 x barns/atom)

E (MeV)	$(\frac{\mu}{\rho})^{KN}_{inc,t}$	$(\frac{\mu}{\rho})^{BD}_{inc,t}$	$(\frac{\mu}{\rho})^{KN}_{inc,a}$	$(\frac{\mu}{\rho})^{BD}_{inc,a}$	$(\frac{\mu}{\rho})^{KN}_{inc,s}$	$(\frac{\mu}{\rho})^{BD}_{inc,s}$	$(\frac{\mu}{\rho})_{coh}$	$(\frac{\mu}{\rho})_{\kappa n}$	$(\frac{\mu}{\rho})_{\kappa e}$	$(\frac{\mu}{\rho})_{\kappa,t}$	$(\frac{\mu}{\rho})_{\kappa,a}$	$(\frac{\mu}{\rho})_{\tau,t}$	$(\frac{\mu}{\rho})_{\tau,a}$	$(\frac{\mu}{\rho})_{tot,t}$	$(\frac{\mu}{\rho})_{tot,t-coh}$	$(\frac{\mu}{\rho})_{tot,a}$	$(\frac{\mu}{\rho})_{tot,en}$
.001	.183	.00658	.000357	.0000128	.182	.00657	5.24					2050.	2050.	2050.	2050.	2050.	2050.
L_{III} .001020	.183	.00678	.000364	.0000135	.182	.00677	5.23					1950.	1950.	1960.	1950.	1950.	1950.
												11000.	11000.	11000.	11000.	11000.	11000.
L_{II} .001043	.183	.00703	.000372	.0000143	.182	.00701	5.21					9670.	9670.	9670.	9670.	9670.	9670.
												13400.	13400.	13400.	13400.	13400.	13400.
L_{I} .001193	.183	.00863	.000425	.0000201	.182	.00861	5.15					9860.	9860.	9860.	9860.	9860.	9860.
												11100.	11100.	11100.	11100.	11100.	11100.
.0015	.182	.0119	.000533	.0000346	.182	.0119	4.99					5890.	5890.	5900.	5890.	5890.	5890.
.002	.182	.0170	.000708	.0000658	.181	.0169	4.72					2620.	2620.	2630.	2620.	2620.	2620.
.003	.181	.0264	.00105	.000153	.181	.0263	4.14					852.	852.	857.	852.	852.	852.
.004	.181	.0354	.00139	.000272	.180	.0351	3.60					383.	383.	387.	383.	383.	383.
.005	.181	.0438	.00172	.000419	.179	.0433	3.11					204.	204.	206.	204.	204.	204.
.006	.180	.0515	.00205	.000590	.178	.0509	2.70					122.	122.	124.	122.	122.	122.
.008	.179	.0651	.00270	.000986	.176	.0641	2.05					53.8	53.8	55.9	53.9	53.8	53.8
K .009659	.177	.0748	.00322	.00135	.174	.0734	1.65					31.2	31.2	33.0	31.3	31.2	31.2
												270.	177.	272.	270.	270.	177.
.01	.177	.0767	.00332	.00144	.174	.0752	1.58					243.	162.	245.	243.	243.	162.
.015	.174	.0967	.00481	.00267	.169	.0940	.958					79.2	61.6	80.2	79.3	79.2	61.6
.02	.170	.110	.00616	.00395	.165	.106	.656					35.7	29.8	36.5	35.8	35.7	29.8
.03	.165	.123	.00860	.00642	.157	.117	.365					11.4	10.1	11.9	11.5	11.4	10.1
.04	.160	.129	.0107	.0086	.149	.121	.229					5.00	4.59	5.36	5.13	5.01	4.60
.05	.155	.132	.0125	.0106	.143	.121	.158					2.60	2.42	2.88	2.73	2.61	2.43
.06	.151	.132	.0142	.0123	.136	.120	.116					1.50	1.42	1.75	1.63	1.52	1.43
.08	.143	.130	.0168	.0152	.126	.114	.0699					.636	.609	.836	.766	.652	.624
.1	.136	.127	.0188	.0175	.117	.110	.0461					.324	.313	.498	.451	.343	.331
.15	.123	.118	.0222	.0214	.100	.0967	.0215					.0958	.0940	.235	.214	.118	.115
.2	.112	.110	.0243	.0237	.0881	.0860	.0123					.0403	.0396	.162	.150	.0646	.0633
.3	.0977	.0967	.0263	.0261	.0714	.0707	.00561					.0120	.0119	.114	.109	.0383	.0380
.4	.0875	.0867	.0271	.0268	.0604	.0599	.00318					.0055	.00545	.0958	.0921	.0326	.0322
.5	.0799	.0794	.0273	.0272	.0526	.0522	.00207					.00309	.00307	.0846	.0825	.0303	.0302
.6	.0739	.0735	.0272	.0269	.0468	.0466	.00145					.00195	.00194	.0769	.0755	.0291	.0288
.8	.0650	.0648	.0265	.0263	.0384	.0385	.000820					.000986	.000986	.0666	.0658	.0275	.0273
1.	.0584	.0582	.0257	.0252	.0327	.0330	.000525					.000625	.000623	.0593	.0589	.0263	.0259
1.5	.0474	.0474	.0235	.0230	.0240	.0243	.000239	.000404		.000404	.000125	.000287	.000287	.0483	.0480	.0241	.0234
2.	.0404	.0404	.0215	.0209	.0190	.0195	.000135	.00154		.00154	.000726	.000173	.000173	.0423	.0422	.0232	.0218
3.	.0318	.0318	.0183	.0175	.0135	.0143	.0000600	.00424	.0000111	.00425	.00269	.0000949	.0000949	.0362	.0361	.0227	.0203
4.	.0266	.0266	.0161	.0153	.0104	.0113	.0000341	.00694	.0000457	.00698	.00495	.0000648	.0000647	.0337	.0337	.0232	.0203
5.	.0229	.0229	.0145	.0134	.00854	.00958	.0000225	.00921	.0000896	.00931	.00697	.0000488	.0000488	.0323	.0323	.0239	.0204
6.	.0203	.0203	.0131	.0120	.00722	.00833	.0000157	.0111	.000139	.0113	.00881	.0000387	.0000387	.0317	.0316	.0244	.0208
8.	.0166	.0166	.0111	.00986	.00553	.00670		.0142	.000236	.0145	.0116	.0000277	.0000277	.0310	.0310	.0255	.0215
10.	.0141	.0141	.00967	.00829	.00448	.00580		.0170	.000325	.0174	.0141	.0000214	.0000214	.0315	.0315	.0271	.0224
15.	.0105	.0105	.00743	.00610	.00303	.00440		.0221	.000509	.0227	.0181	.0000138	.0000138	.0332	.0332	.0301	.0241
20.	.00840	.00840	.00610	.00477	.00229	.00363		.0258	.000647	.0264	.0201	.0000106	.0000106	.0348	.0348	.0325	.0249
30.	.00612	.00612	.00457	.00313	.00155	.00299		.0308	.000857	.0316	.0224			.0377	.0377	.0362	.0255
40.	.00486	.00486	.00369	.00223	.00117	.00263		.0344	.00100	.0354	.0233			.0403	.0403	.0391	.0255
50.	.00405	.00405	.00312	.00168	.000931	.00238		.0370	.00111	.0381	.0234			.0422	.0422	.0413	.0251
60.	.00349	.00349	.00271	.00132	.000782	.00217		.0391	.00120	.0403	.0233			.0438	.0438	.0429	.0246
80.	.00275	.00275	.00217	.000879	.000589	.00188		.0422	.00134	.0435	.0233			.0462	.0462	.0456	.0242
100.	.00228	.00228	.00181	.000633	.000472	.00165		.0447	.00144	.0462	.0228			.0485	.0485	.0480	.0235

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(barns/atom)

E (MeV)	$\sigma^{KN}_{inc,t}$	$\sigma^{BD}_{inc,t}$	$\sigma^{KN}_{inc,a}$	$\sigma^{BD}_{inc,a}$	$\sigma^{KN}_{inc,s}$	$\sigma^{BD}_{inc,s}$	σ_{coh}	$\sigma_{\kappa n}$	$\sigma_{\kappa e}$	$\sigma_{\kappa,t}$	$\sigma_{\kappa,a}$	$\sigma_{\gamma,t}$	$\sigma_{\gamma,a}$	$\sigma_{tot,t}$	$\sigma_{tot,t-coh}$	$\sigma_{tot,a}$	$\sigma_{tot,en}$
.001	20.5	.761	.0400	.00148	20.5	.760	603.					257000.	257000.	258000.	257000.	257000.	257000.
L_{III} .001115	20.5	.900	.0446	.00195	20.5	.898	597.					195000.	195000.	196000.	195000.	195000.	195000.
												1060000.	1050000.	1060000.	1060000.	1060000.	1050000.
L_{II} .001142	20.5	.933	.0457	.00207	20.5	.931	595.					933000.	924000.	934000.	933000.	933000.	924000.
												1290000.	1280000.	1290000.	1290000.	1290000.	1280000.
L_{I} .001300	20.5	1.13	.0519	.00286	20.5	1.13	586.					965000.	957000.	966000.	965000.	965000.	957000.
												1090000.	1080000.	1090000.	1090000.	1090000.	1080000.
.0015	20.5	1.37	.0598	.00400	20.4	1.37	573.					729000.	724000.	730000.	729000.	729000.	724000.
.002	20.5	1.96	.0794	.0076	20.4	1.95	540.					326000.	324000.	327000.	326000.	326000.	324000.
.003	20.4	3.04	.118	.0176	20.3	3.02	474.					106000.	106000.	106000.	106000.	106000.	106000.
.004	20.3	4.01	.156	.0309	20.1	3.98	414.					47600.	47500.	48000.	47600.	47600.	47500.
.005	20.2	4.91	.194	.0470	20.0	4.86	361.					25300.	25200.	25700.	25300.	25300.	25200.
.006	20.1	5.75	.231	.0658	19.9	5.68	314.					15200.	15200.	15500.	15200.	15200.	15200.
.008	20.0	7.22	.303	.109	19.7	7.11	240.					6750.	6740.	7000.	6760.	6750.	6740.
.01	19.9	8.48	.372	.159	19.5	8.32	187.					3550.	3550.	3750.	3960.	3550.	3550.
K .010367	19.8	8.69	.385	.169	19.4	8.52	179.					3200.	3200.	3390.	3210.	3200.	3200.
												27100.	17100.	27300.	27100.	27100.	17100.
.015	19.5	10.7	.539	.296	19.0	10.4	113.					9720.	7240.	9840.	9730.	9720.	7240.
.02	19.2	12.2	.691	.440	18.5	11.8	77.1					4370.	3540.	4460.	4380.	4370.	3540.
.03	18.5	13.7	.964	.713	17.6	13.0	43.0					1400.	1220.	1460.	1410.	1400.	1220.
.04	17.9	14.4	1.20	.96	16.7	13.4	27.1					620.	561.	661.	634.	621.	562.
.05	17.4	14.7	1.40	1.19	16.0	13.5	18.7					322.	297.	355.	337.	323.	298.
.06	16.9	14.7	1.59	1.38	15.3	13.3	13.7					187.	175.	215.	202.	189.	176.
.08	16.0	14.5	1.88	1.70	14.2	12.8	8.26					79.4	75.6	102.	93.9	81.3	77.3
.1	15.3	14.2	2.11	1.96	13.2	12.2	5.44					40.7	39.1	60.3	54.9	42.8	41.1
.15	13.8	13.2	2.58	2.40	11.3	10.8	2.53					12.0	11.7	27.7	25.2	14.5	14.1
.2	12.6	12.3	2.72	2.66	9.88	9.64	1.46					5.09	4.99	18.8	17.4	7.81	7.65
.3	11.0	10.8	2.95	2.91	8.00	7.89	.663					1.51	1.49	13.0	12.3	4.46	4.40
.4	9.81	9.72	3.04	3.00	6.78	6.72	.376					.693	.686	10.8	10.4	3.73	3.69
.5	8.96	8.90	3.06	3.04	5.91	5.86	.244					.390	.387	9.53	9.29	3.45	3.43
.6	8.29	8.25	3.05	3.02	5.25	5.23	.171					.248	.246	8.67	8.50	3.30	3.27
.8	7.28	7.26	2.98	2.94	4.31	4.32	.0967					.125	.124	7.48	7.38	3.11	3.06
1.	6.55	6.53	2.88	2.82	3.67	3.71	.0620					.0791	.0788	6.67	6.61	2.96	2.90
1.5	5.32	5.31	2.63	2.59	2.69	2.72	.0280	.0470		.0470	.0146	.0368	.0367	5.42	5.39	2.71	2.64
2.	4.54	4.53	2.41	2.35	2.13	2.18	.0160	.180		.180	.0850	.0221	.0221	4.75	4.73	2.61	2.46
3.	3.57	3.57	2.06	1.97	1.51	1.60	.00710	.491	.00125	.492	.312	.0120	.0120	4.08	4.07	2.56	2.29
4.	2.98	2.98	1.81	1.70	1.17	1.28	.00400	.804	.00512	.809	.572	.00820	.00819	3.80	3.80	2.63	2.28
5.	2.58	2.58	1.62	1.50	.958	1.08	.00264	1.07	.0100	1.08	.808	.00620	.00620	3.67	3.67	2.71	2.31
6.	2.28	2.28	1.47	1.34	.810	.939	.00185	1.29	.0156	1.31	1.02	.00495	.00495	3.60	3.59	2.78	2.36
8.	1.86	1.86	1.24	1.10	.620	.757	.00101	1.65	.0265	1.68	1.34	.00353	.00353	3.54	3.54	2.92	2.44
10.	1.59	1.59	1.08	.929	.502	.661		1.96	.0364	2.00	1.62	.00270	.00270	3.59	3.59	3.08	2.55
15.	1.17	1.17	.833	.676	.340	.494		2.57	.0570	2.63	2.09	.00172	.00172	3.80	3.80	3.46	2.77
20.	.942	.942	.684	.528	.258	.414		2.99	.0724	3.06	2.32	.00131	.00131	4.00	4.00	3.75	2.85
30.	.686	.686	.512	.349	.173	.337		3.58	.0960	3.68	2.58			4.37	4.37	4.19	2.93
40.	.545	.545	.414	.246	.131	.299		4.00	.113	4.11	2.69			4.66	4.66	4.52	2.94
50.	.455	.455	.350	.187	.105	.268		4.30	.125	4.43	2.69			4.88	4.88	4.78	2.88
60.	.392	.392	.304	.146	.0877	.246		4.52	.135	4.66	2.67			5.05	5.05	4.96	2.82
80.	.309	.309	.243	.0980	.0660	.211		4.89	.150	5.04	2.66			5.35	5.35	5.28	2.74
100.	.257	.257	.204	.0709	.0529	.186		5.20	.160	5.36	2.62			5.62	5.62	5.56	2.69

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(cm^2/g = 0.008638 x barns/atom)

E (MeV)	$(\frac{\mu}{\rho})^{KN}_{inc,t}$	$(\frac{\mu}{\rho})^{BD}_{inc,t}$	$(\frac{\mu}{\rho})^{KN}_{inc,a}$	$(\frac{\mu}{\rho})^{BD}_{inc,a}$	$(\frac{\mu}{\rho})^{KN}_{inc,s}$	$(\frac{\mu}{\rho})^{BD}_{inc,s}$	$(\frac{\mu}{\rho})_{coh}$	$(\frac{\mu}{\rho})_{\kappa n}$	$(\frac{\mu}{\rho})_{\kappa e}$	$(\frac{\mu}{\rho})_{\kappa,t}$	$(\frac{\mu}{\rho})_{\kappa,a}$	$(\frac{\mu}{\rho})_{r,t}$	$(\frac{\mu}{\rho})_{r,a}$	$(\frac{\mu}{\rho})_{tot,t}$	$(\frac{\mu}{\rho})_{tot,t-coh}$	$(\frac{\mu}{\rho})_{tot,a}$	$(\frac{\mu}{\rho})_{tot,en}$
.001	.177	.00657	.000346	.0000128	.177	.00656	5.21					2220.	2220.	2230.	2220.	2220.	2220.
L_{III} .0011115	.177	.00777	.000385	.0000168	.177	.00776	5.16					1680.	1680.	1690.	1680.	1680.	1680.
												9160.	9070.	9160.	9160.	9160.	9070.
L_{II} .001142	.177	.00806	.000395	.0000179	.177	.00804	5.14					8060.	7980.	8070.	8060.	8060.	7980.
												11100.	11100.	11100.	11100.	11100.	11100.
L_{I} .001300	.177	.00976	.000448	.0000247	.177	.00976	5.06					8340.	8270.	8340.	8340.	8340.	8270.
												9420.	9330.	9420.	9420.	9420.	9330.
.0015	.177	.0118	.000517	.0000346	.176	.0118	4.95					6300.	6250.	6310.	6300.	6300.	6250.
.002	.177	.0169	.000686	.0000656	.176	.0168	4.66					2820.	2800.	2820.	2820.	2820.	2800.
.003	.176	.0263	.00102	.000152	.175	.0261	4.09					916.	916.	916.	916.	916.	916.
.004	.175	.0346	.00135	.000267	.174	.0344	3.58					411.	410.	415.	411.	411.	410.
.005	.174	.0424	.00168	.000406	.173	.0420	3.12					219.	218.	222.	219.	219.	218.
.006	.174	.0497	.00200	.000568	.172	.0491	2.71					131.	131.	134.	131.	131.	131.
.008	.173	.0624	.00262	.000942	.170	.0614	2.07					58.3	58.2	60.5	58.4	58.3	58.2
.01	.172	.0733	.00321	.00137	.168	.0719	1.62					30.7	30.7	32.4	30.8	30.7	30.7
K .010367	.171	.0751	.00333	.00146	.168	.0736	1.55					27.6	27.6	29.3	27.7	27.6	27.6
												234.	148.	236.	234.	234.	148.
.015	.168	.0924	.00466	.00256	.164	.0898	.976					84.0	62.5	85.0	84.0	84.0	62.5
.02	.166	.105	.00597	.00380	.160	.102	.666					37.7	30.6	38.5	37.8	37.7	30.6
.03	.160	.118	.00833	.00616	.152	.112	.371					12.1	10.5	12.6	12.2	12.1	10.5
.04	.155	.124	.0104	.00829	.144	.116	.234					5.36	4.85	5.71	5.48	5.36	4.85
.05	.150	.127	.0121	.0103	.138	.117	.162					2.78	2.57	3.07	2.91	2.79	2.57
.06	.146	.127	.0137	.0119	.132	.115	.118					1.62	1.51	1.86	1.74	1.63	1.52
.08	.138	.125	.0162	.0147	.123	.111	.0713					.686	.653	.881	.811	.702	.668
.1	.132	.123	.0182	.0169	.114	.105	.0470					.352	.338	.521	.474	.370	.355
.15	.119	.114	.0216	.0207	.0976	.0933	.0219					.104	.101	.239	.218	.125	.122
.2	.109	.106	.0235	.0230	.0853	.0833	.0126					.0440	.0431	.162	.150	.0875	.0861
.3	.0950	.0933	.0255	.0251	.0691	.0682	.00573					.0130	.0129	.112	.106	.0385	.0380
.4	.0847	.0840	.0263	.0259	.0586	.0580	.00325					.00599	.00593	.0933	.0898	.0322	.0319
.5	.0774	.0769	.0264	.0263	.0511	.0506	.00211					.00337	.00334	.0823	.0802	.0298	.0296
.6	.0716	.0713	.0263	.0261	.0453	.0452	.00148					.00214	.00212	.0749	.0734	.0285	.0282
.8	.0629	.0627	.0257	.0254	.0372	.0373	.000835					.00108	.00107	.0646	.0637	.0269	.0264
1.	.0566	.0564	.0249	.0244	.0317	.0320	.000536					.000683	.000681	.0576	.0571	.0256	.0251
1.5	.0460	.0459	.0227	.0224	.0232	.0235	.000242	.000406		.000406	.000126	.000318	.000317	.0468	.0466	.0234	.0228
2.	.0392	.0391	.0208	.0203	.0184	.0188	.000138	.00155		.00155	.000734	.000191	.000191	.0410	.0409	.0225	.0212
3.	.0308	.0308	.0178	.0170	.0130	.0138	.0000613	.00424	.0000108	.00425	.00278	.000104	.000104	.0352	.0352	.0221	.0198
4.	.0257	.0257	.0156	.0147	.0101	.0111	.0000346	.00694	.0000442	.00699	.00494	.0000708	.0000707	.0328	.0328	.0227	.0197
5.	.0223	.0223	.0140	.0130	.00828	.00933	.0000228	.00924	.0000864	.00933	.00698	.0000536	.0000536	.0317	.0317	.0234	.0200
6.	.0197	.0197	.0127	.0116	.00700	.00811	.0000160	.0111	.000135	.0113	.00881	.0000428	.0000428	.0311	.0310	.0240	.0204
8.	.0161	.0161	.0107	.00950	.00536	.00654	.0000087	.0143	.000229	.0145	.0116	.0000305	.0000305	.0306	.0306	.0252	.0211
10.	.0137	.0137	.00933	.00802	.00434	.00571		.0169	.000314	.0173	.0140	.0000233	.0000233	.0310	.0310	.0266	.0220
15.	.0101	.0101	.00720	.00584	.00294	.00427		.0222	.000492	.0227	.0181	.0000149	.0000149	.0328	.0328	.0299	.0239
20.	.00814	.00814	.00591	.00456	.00223	.00358		.0258	.000625	.0264	.0200	.0000113	.0000113	.0346	.0346	.0324	.0246
30.	.00593	.00593	.00442	.00301	.00149	.00291		.0309	.000829	.0318	.0223			.0377	.0377	.0362	.0253
40.	.00471	.00471	.00358	.00212	.00113	.00258		.0346	.000976	.0355	.0232			.0403	.0403	.0390	.0254
50.	.00393	.00393	.00302	.00162	.000907	.00231		.0371	.00108	.0383	.0232			.0422	.0422	.0413	.0249
60.	.00339	.00339	.00263	.00126	.000758	.00212		.0390	.00117	.0403	.0231			.0436	.0436	.0428	.0244
80.	.00267	.00267	.00210	.000847	.000570	.00182		.0422	.00130	.0435	.0230			.0462	.0462	.0456	.0238
100.	.00222	.00222	.00176	.000612	.000457	.00161		.0449	.00138	.0463	.0226			.0485	.0485	.0480	.0232

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(barns/atom)

E (MeV)	$\sigma^{KN}_{inc,t}$	$\sigma^{BD}_{inc,t}$	$\sigma^{KN}_{inc,a}$	$\sigma^{BD}_{inc,a}$	$\sigma^{KN}_{inc,s}$	$\sigma^{BD}_{inc,s}$	σ_{coh}	$\sigma_{\gamma n}$	$\sigma_{\gamma e}$	$\sigma_{\gamma,t}$	$\sigma_{\gamma,a}$	$\sigma_{\gamma,t}$	$\sigma_{\gamma,a}$	$\sigma_{tot,t}$	$\sigma_{tot,t-coh}$	$\sigma_{tot,a}$	$\sigma_{tot,en}$
.001	21.2	.758	.0413	.00148	21.2	.757	642.					296000.	296000.	297000.	296000.	296000.	296000.
L_{III} .001217	21.2	1.03	.0502	.00244	21.1	1.03	628.					179000.	179000.	180000.	179000.	179000.	179000.
												948000.	933000.	949000.	948000.	948000.	933000.
L_{II} .001248	21.2	1.07	.0515	.00260	21.1	1.07	626.					833000.	820000.	834000.	833000.	833000.	820000.
												1150000.	1130000.	1150000.	1150000.	1150000.	1130000.
L_{I} .001413	21.2	1.28	.0582	.00352	21.1	1.28	615.					871000.	859000.	872000.	871000.	871000.	859000.
												983000.	970000.	984000.	983000.	983000.	970000.
.0015	21.2	1.39	.0617	.00405	21.1	1.39	609.					829000.	818000.	830000.	829000.	829000.	818000.
.002	21.1	2.01	.0820	.00780	21.0	2.00	572.					370000.	366000.	371000.	370000.	370000.	366000.
.003	21.0	3.14	.122	.0182	20.9	3.12	501.					119000.	118000.	120000.	119000.	119000.	118000.
.004	21.0	4.13	.161	.0318	20.8	4.10	438.					54000.	53700.	54400.	54000.	54000.	53700.
.005	20.9	5.04	.200	.0483	20.7	4.99	383.					28900.	28800.	29300.	28900.	28900.	28800.
.006	20.8	5.88	.238	.0673	20.6	5.81	335.					17400.	17300.	17700.	17400.	17400.	17300.
.008	20.6	7.37	.312	.112	20.3	7.26	258.					7750.	7730.	8020.	7760.	7750.	7730.
.01	20.5	8.64	.384	.162	20.1	8.48	202.					4090.	4080.	4300.	4100.	4090.	4080.
K .011104	20.4	9.36	.423	.194	20.0	9.17	178.					3020.	3010.	3210.	3030.	3020.	3010.
												25100.	15200.	25300.	25100.	25100.	15200.
.015	20.1	11.0	.556	.304	19.6	10.7	122.					10900.	7730.	11000.	10900.	10900.	7730.
.02	19.8	12.5	.713	.451	19.1	12.0	83.2					4900.	3830.	5000.	4910.	4900.	3830.
.03	19.1	14.1	.995	.734	18.1	13.4	46.5					1580.	1350.	1640.	1590.	1580.	1350.
.04	18.5	14.8	1.24	.987	17.3	13.8	29.4					700.	624.	744.	715.	701.	625.
.05	18.0	15.1	1.45	1.22	16.5	13.9	20.3					370.	338.	405.	385.	371.	339.
.06	17.5	15.2	1.64	1.43	15.8	13.8	14.9					214.	198.	244.	229.	216.	199.
.08	16.6	15.0	1.94	1.76	14.6	13.2	8.96					91.0	86.0	115.	106.	92.9	87.8
.1	15.8	14.6	2.18	2.01	13.6	12.6	5.90					47.0	44.9	67.5	61.6	49.2	46.9
.15	14.2	13.6	2.58	2.47	11.6	11.1	2.75					14.0	13.6	30.4	27.6	16.6	16.1
.2	13.0	12.7	2.81	2.75	10.2	9.95	1.58					5.92	5.79	20.2	18.6	8.73	8.54
.3	11.3	11.1	3.05	2.99	8.26	8.11	.720					1.75	1.72	13.6	12.8	4.80	4.71
.4	10.1	10.0	3.14	3.09	7.00	6.91	.408					.802	.793	11.2	10.8	3.94	3.88
.5	9.25	9.19	3.16	3.14	6.10	6.05	.265					.453	.449	9.91	9.64	3.61	3.59
.6	8.56	8.51	3.15	3.11	5.41	5.40	.185					.287	.285	8.98	8.80	3.44	3.39
.8	7.52	7.49	3.07	3.03	4.44	4.46	.104					.145	.144	7.74	7.63	3.21	3.17
1.	6.76	6.74	2.97	2.91	3.79	3.83	.0670					.0921	.0917	6.90	6.83	3.06	3.00
1.5	5.49	5.48	2.72	2.66	2.77	2.82	.0302	.0502		.0502	.0156	.0431	.0430	5.60	5.57	2.81	2.72
2.	4.68	4.68	2.49	2.42	2.20	2.26	.0173	.192		.192	.0904	.0261	.0260	4.92	4.90	2.71	2.54
3.	3.68	3.68	2.12	2.03	1.56	1.65	.00770	.528	.00129	.529	.335	.0141	.0141	4.23	4.22	2.66	2.38
4.	3.08	3.08	1.87	1.76	1.21	1.32	.00432	.859	.00529	.864	.616	.00946	.00945	3.96	3.95	2.74	2.38
5.	2.66	2.66	1.67	1.54	.989	1.12	.00285	1.14	.0103	1.15	.859	.00717	.00716	3.82	3.82	2.83	2.41
6.	2.35	2.35	1.51	1.38	.836	.971	.00201	1.37	.0161	1.39	1.08	.00570	.00570	3.75	3.75	2.91	2.47
8.	1.92	1.92	1.28	1.13	.640	.787	.00112	1.75	.0273	1.78	1.42	.00407	.00407	3.71	3.70	3.06	2.55
10.	1.64	1.64	1.12	.951	.518	.689		2.10	.0376	2.14	1.73	.00312	.00312	3.78	3.78	3.26	2.68
15.	1.21	1.21	.860	.693	.351	.517		2.73	.0590	2.79	2.21	.00199	.00199	4.00	4.00	3.65	2.90
20.	.972	.972	.707	.542	.266	.430		3.18	.0748	3.25	2.45	.00151	.00151	4.22	4.22	3.96	2.99
30.	.708	.708	.529	.355	.179	.353		3.80	.0990	3.90	2.73	.00101	.00101	4.61	4.61	4.43	3.09
40.	.563	.563	.428	.253	.135	.310		4.25	.117	4.37	2.84			4.93	4.93	4.80	3.09
50.	.470	.470	.362	.191	.108	.279		4.57	.128	4.70	2.84			5.17	5.17	5.06	3.03
60.	.404	.404	.314	.149	.0905	.255		4.80	.139	4.94	2.81			5.34	5.34	5.25	2.96
80.	.319	.319	.251	.0998	.0681	.219		5.19	.155	5.34	2.81			5.66	5.66	5.59	2.91
100.	.265	.265	.210	.0726	.0546	.192		5.50	.165	5.66	2.76			5.92	5.92	5.87	2.83

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(cm^2/g = 0.008297 x barns/atom)

E (MeV)	$(\frac{\mu}{\rho})^{KN}_{inc,t}$	$(\frac{\mu}{\rho})^{BD}_{inc,t}$	$(\frac{\mu}{\rho})^{KN}_{inc,a}$	$(\frac{\mu}{\rho})^{BD}_{inc,a}$	$(\frac{\mu}{\rho})^{KN}_{inc,s}$	$(\frac{\mu}{\rho})^{BD}_{inc,s}$	$(\frac{\mu}{\rho})_{coh}$	$(\frac{\mu}{\rho})_{\kappa n}$	$(\frac{\mu}{\rho})_{\kappa e}$	$(\frac{\mu}{\rho})_{\kappa,t}$	$(\frac{\mu}{\rho})_{\kappa,a}$	$(\frac{\mu}{\rho})_{\tau,t}$	$(\frac{\mu}{\rho})_{\tau,a}$	$(\frac{\mu}{\rho})_{tot,t}$	$(\frac{\mu}{\rho})_{tot,t-coh}$	$(\frac{\mu}{\rho})_{tot,a}$	$(\frac{\mu}{\rho})_{tot,en}$
.001	.176	.00629	.000343	.0000123	.176	.00628	5.33					2460.	2460.	2460.	2460.	2460.	2460.
L_{III} .001217	.176	.00855	.000417	.0000202	.175	.00855	5.21					1490.	1490.	1490.	1490.	1490.	1490.
L_{II} .001248	.176	.00888	.000427	.0000216	.175	.00888	5.19					7870.	7740.	7870.	7870.	7870.	7740.
L_{I} .001413	.176	.0106	.000483	.0000292	.175	.0106	5.10					6910.	6800.	6920.	6910.	6910.	6800.
												9540.	9380.	9540.	9540.	9540.	9380.
												7230.	7130.	7230.	7230.	7230.	7130.
												8160.	8050.	8160.	8160.	8160.	8050.
.0015	.176	.0115	.000512	.0000336	.175	.0115	5.05					6880.	6790.	6890.	6880.	6880.	6790.
.002	.175	.0167	.000680	.0000647	.174	.0166	4.75					3070.	3040.	3080.	3070.	3070.	3040.
.003	.174	.0261	.00101	.000151	.173	.0259	4.16					987.	979.	996.	987.	987.	979.
.004	.174	.0343	.00134	.000264	.173	.0340	3.63					448.	446.	451.	448.	448.	446.
.005	.173	.0418	.00166	.000401	.172	.0414	3.18					240.	239.	243.	240.	240.	239.
.006	.173	.0488	.00197	.000558	.171	.0482	2.78					144.	144.	147.	144.	144.	144.
.008	.171	.0611	.00259	.000929	.168	.0602	2.14					64.3	64.1	66.5	64.4	64.3	64.1
.01	.170	.0717	.00319	.00134	.167	.0704	1.68					33.9	33.9	35.7	34.0	33.9	33.9
K .011104	.169	.0777	.00351	.00161	.166	.0761	1.48					25.1	25.0	26.6	25.1	25.1	25.0
												208.	126.	210.	208.	208.	126.
.015	.167	.0913	.00461	.00252	.163	.0888	1.01					90.4	64.1	91.3	90.4	90.4	64.1
.02	.164	.104	.00592	.00374	.158	.0996	.690					40.7	31.8	41.5	40.7	40.7	31.8
.03	.158	.117	.00826	.00609	.150	.111	.386					13.1	11.2	13.6	13.2	13.1	11.2
.04	.153	.123	.0103	.00819	.144	.114	.244					5.81	5.18	6.17	5.93	5.82	5.19
.05	.149	.125	.0120	.0101	.137	.115	.168					3.07	2.80	3.36	3.19	3.08	2.81
.06	.145	.126	.0136	.0119	.131	.114	.124					1.78	1.64	2.02	1.90	1.79	1.65
.08	.138	.124	.0161	.0146	.121	.110	.0743					.755	.714	.954	.879	.771	.728
.1	.131	.121	.0181	.0167	.113	.105	.0490					.390	.373	.500	.511	.408	.389
.15	.118	.113	.0214	.0205	.0962	.0921	.0228					.116	.113	.292	.229	.138	.134
.2	.108	.105	.0233	.0228	.0846	.0826	.0131					.0491	.0480	.168	.154	.0724	.0709
.3	.0938	.0921	.0253	.0248	.0685	.0673	.00597					.0145	.0143	.113	.106	.0398	.0391
.4	.0838	.0830	.0261	.0256	.0581	.0573	.00339					.00665	.00658	.0929	.0896	.0327	.0322
.5	.0767	.0762	.0262	.0261	.0506	.0502	.00220					.00376	.00373	.0822	.0808	.0300	.0298
.6	.0710	.0706	.0261	.0258	.0449	.0448	.00153					.00238	.00236	.0745	.0730	.0285	.0281
.8	.0624	.0621	.0255	.0251	.0368	.0370	.000863					.00120	.00119	.0642	.0633	.0266	.0263
1.	.0561	.0559	.0246	.0241	.0314	.0318	.000556					.000764	.000761	.0572	.0567	.0254	.0249
1.5	.0456	.0455	.0226	.0221	.0230	.0234	.000251	.000417		.000417	.000129	.000358	.000357	.0465	.0462	.0233	.0226
2.	.0388	.0388	.0207	.0201	.0183	.0188	.000144	.00199		.00159	.00075	.000217	.000216	.0408	.0407	.0225	.0211
3.	.0305	.0305	.0176	.0168	.0129	.0137	.0000639	.00438	.0000107	.00439	.00278	.000117	.000117	.0351	.0350	.0221	.0197
4.	.0256	.0256	.0155	.0146	.0100	.0110	.0000358	.00713	.0000439	.00717	.00506	.0000785	.0000784	.0329	.0328	.0227	.0197
5.	.0221	.0221	.0139	.0128	.00821	.00929	.0000236	.00946	.0000855	.00954	.00713	.0000595	.0000594	.0317	.0317	.0235	.0200
6.	.0195	.0195	.0125	.0114	.00694	.00806	.0000167	.0114	.000134	.0115	.00896	.0000473	.0000473	.0311	.0311	.0241	.0205
8.	.0159	.0159	.0106	.00938	.00531	.00653	.0000093	.0145	.000227	.0148	.0118	.0000338	.0000338	.0308	.0307	.0254	.0212
10.	.0136	.0136	.00929	.00789	.00430	.00572		.0174	.000312	.0178	.0144	.0000259	.0000259	.0314	.0314	.0270	.0222
15.	.0100	.0100	.00714	.00575	.00291	.00429		.0227	.000490	.0231	.0183	.0000165	.0000165	.0332	.0332	.0303	.0241
20.	.00806	.00806	.00587	.00450	.00221	.00357		.0264	.000621	.0270	.0203	.0000125	.0000125	.0350	.0350	.0329	.0248
30.	.00587	.00587	.00439	.00295	.00149	.00293		.0315	.000821	.0324	.0227	.00000840	.00000840	.0382	.0382	.0368	.0256
40.	.00467	.00467	.00355	.00210	.00112	.00257		.0353	.000971	.0363	.0236			.0409	.0409	.0398	.0256
50.	.00390	.00390	.00300	.00158	.000896	.00231		.0379	.00106	.0390	.0236			.0429	.0429	.0420	.0251
60.	.00335	.00335	.00261	.00124	.000751	.00212		.0398	.00115	.0410	.0233			.0443	.0443	.0436	.0246
80.	.00265	.00265	.00208	.000828	.000565	.00182		.0431	.00129	.0443	.0233			.0470	.0470	.0464	.0241
100.	.00220	.00220	.00174	.000602	.000453	.00159		.0456	.00137	.0470	.0229			.0491	.0491	.0487	.0235

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(barns/atom)

E (MeV)	$\sigma^{KN}_{inc,t}$	$\sigma^{BD}_{inc,t}$	$\sigma^{KN}_{inc,a}$	$\sigma^{BD}_{inc,a}$	$\sigma^{KN}_{inc,s}$	$\sigma^{BD}_{inc,s}$	σ_{coh}	$\sigma_{\gamma n}$	$\sigma_{\gamma e}$	$\sigma_{\gamma,t}$	$\sigma_{\gamma,a}$	$\sigma_{\gamma,t}$	$\sigma_{\gamma,a}$	$\sigma_{tot,t}$	$\sigma_{tot,t-coh}$	$\sigma_{tot,a}$	$\sigma_{tot,en}$
.001	21.9	.722	.0426	.00141	21.8	.721	684.					338000.	338000.	339000.	338000.	338000.	338000.
L_{III} .001323	21.8	1.13	.0562	.00291	21.8	1.13	662.					165000.	165000.	166000.	165000.	165000.	165000.
												853000.	836000.	854000.	853000.	853000.	836000.
L_{II} .001359	21.8	1.17	.0577	.00309	21.8	1.17	659.					747000.	732000.	748000.	747000.	747000.	732000.
												1030000.	1010000.	1030000.	1030000.	1030000.	1010000.
.0015	21.8	1.36	.0637	.00397	21.8	1.36	648.					825000.	810000.	826000.	825000.	825000.	810000.
L_{I} .00153	21.8	1.39	.0649	.00414	21.8	1.39	646.					790000.	776000.	791000.	790000.	790000.	776000.
												892000.	876000.	893000.	892000.	892000.	876000.
.002	21.8	2.00	.0845	.00776	21.7	1.99	608.					421000.	415000.	422000.	421000.	421000.	415000.
.003	21.7	3.18	.126	.0184	21.6	3.16	530.					136000.	135000.	137000.	136000.	136000.	135000.
.004	21.6	4.24	.166	.0326	21.4	4.21	463.					61800.	61400.	62300.	61800.	61800.	61400.
.005	21.5	5.17	.206	.0495	21.3	5.12	405.					33100.	32900.	33500.	33100.	33100.	32900.
.006	21.4	6.03	.246	.0690	21.2	5.96	356.					19900.	19800.	20300.	19900.	19900.	19800.
.008	21.3	7.53	.322	.114	21.0	7.42	276.					8910.	8880.	9190.	8920.	8910.	8880.
.01	21.1	8.81	.396	.165	20.7	8.64	217.					4710.	4700.	4940.	4720.	4710.	4700.
K .011867	21.0	9.83	.464	.217	20.5	9.61	177.					2860.	2850.	3050.	2870.	2860.	2850.
												23400.	13600.	23600.	23400.	23400.	13600.
.015	20.8	11.2	.574	.310	20.2	10.9	131.					12200.	8180.	12300.	12200.	12200.	8180.
.02	20.4	12.7	.736	.458	19.7	12.2	89.5					5480.	4120.	5580.	5490.	5480.	4120.
.03	19.7	14.4	1.03	.749	18.7	13.7	50.2					1770.	1480.	1830.	1780.	1770.	1480.
.04	19.1	15.2	1.27	1.01	17.8	14.2	31.8					790.	692.	837.	805.	791.	693.
.05	18.5	15.5	1.49	1.25	17.0	14.2	21.9					419.	378.	456.	434.	420.	379.
.06	18.0	15.6	1.69	1.46	16.3	14.1	16.1					244.	224.	276.	260.	246.	225.
.08	17.1	15.4	2.00	1.80	15.1	13.6	9.69					103.	96.6	128.	118.	105.	98.4
.1	16.3	15.0	2.24	2.07	14.0	12.9	6.39					54.0	51.3	75.4	69.0	56.2	53.4
.15	14.6	14.0	2.66	2.54	12.0	11.5	2.98					16.0	15.5	33.0	30.0	18.7	18.0
.2	13.4	13.0	2.90	2.81	10.5	10.2	1.71					6.73	6.56	21.4	19.7	9.63	9.37
.3	11.7	11.5	3.14	3.10	8.52	8.40	.779					2.02	1.99	14.3	13.5	5.16	5.09
.4	10.4	10.3	3.24	3.18	7.21	7.12	.442					.920	.909	11.7	11.2	4.16	4.09
.5	9.54	9.47	3.25	3.23	6.29	6.24	.287					.520	.515	10.3	9.99	3.77	3.75
.6	8.83	8.78	3.24	3.21	5.58	5.57	.200					.330	.327	9.31	9.11	3.57	3.54
.8	7.75	7.73	3.17	3.13	4.58	4.60	.113					.168	.167	8.01	7.90	3.34	3.30
1.	6.97	6.95	3.07	3.00	3.90	3.95	.0727					.105	.104	7.13	7.05	3.17	3.10
1.5	5.66	5.65	2.80	2.75	2.86	2.90	.0328	.0540		.0540	.0167	.0494	.0492	5.79	5.75	2.90	2.82
2.	4.83	4.82	2.56	2.49	2.27	2.33	.0186	.205		.205	.0966	.0301	.0300	5.07	5.06	2.80	2.62
3.	3.80	3.80	2.19	2.09	1.61	1.71	.0083	.560	.00133	.561	.355	.0165	.0165	4.39	4.38	2.77	2.44
4.	3.17	3.17	1.93	1.81	1.25	1.36	.00465	.912	.00545	.917	.647	.0110	.0110	4.10	4.10	2.86	2.47
5.	2.74	2.74	1.72	1.59	1.02	1.15	.00306	1.22	.0107	1.23	.917	.00828	.00827	3.98	3.98	2.96	2.52
6.	2.42	2.42	1.56	1.42	.863	1.00	.00216	1.45	.0166	1.47	1.14	.00660	.00659	3.90	3.90	3.04	2.57
8.	1.98	1.98	1.32	1.16	.660	.816	.00122	1.85	.0282	1.88	1.50	.00470	.00470	3.87	3.86	3.20	2.66
10.	1.69	1.69	1.15	.977	.534	.713		2.22	.0387	2.26	1.82	.00358	.00358	3.95	3.95	3.41	2.80
15.	1.25	1.25	.887	.712	.362	.537		2.90	.0609	2.96	2.34	.00228	.00228	4.21	4.21	3.85	3.05
20.	1.00	1.00	.729	.553	.274	.447		3.37	.0770	3.45	2.59	.00172	.00172	4.45	4.45	4.18	3.14
30.	.730	.730	.545	.365	.184	.365		4.01	.102	4.11	2.85	.00115	.00115	4.84	4.84	4.66	3.22
40.	.580	.580	.441	.259	.139	.321		4.50	.120	4.62	2.98			5.20	5.20	5.04	3.24
50.	.484	.484	.373	.195	.112	.289		4.85	.132	4.98	2.98			5.46	5.46	5.35	3.17
60.	.417	.417	.324	.153	.0934	.264		5.10	.143	5.24	2.96			5.66	5.66	5.56	3.11
80.	.329	.329	.259	.102	.0703	.227		5.50	.159	5.66	2.95			5.99	5.99	5.92	3.05
100.	.273	.273	.217	.0743	.0563	.199		5.83	.170	6.00	2.89			6.27	6.27	6.22	2.96

33 ARSENIC

(cm^2/g = 0.008038 x barns/atom)

E (MeV)	$(\frac{\mu}{\rho})^{KN}_{inc,t}$	$(\frac{\mu}{\rho})^{BD}_{inc,t}$	$(\frac{\mu}{\rho})^{KN}_{inc,a}$	$(\frac{\mu}{\rho})^{BD}_{inc,a}$	$(\frac{\mu}{\rho})^{KN}_{inc,s}$	$(\frac{\mu}{\rho})^{BD}_{inc,s}$	$(\frac{\mu}{\rho})_{coh}$	$(\frac{\mu}{\rho})_{\pi n}$	$(\frac{\mu}{\rho})_{\pi e}$	$(\frac{\mu}{\rho})_{\pi,t}$	$(\frac{\mu}{\rho})_{\pi,a}$	$(\frac{\mu}{\rho})_{\tau,t}$	$(\frac{\mu}{\rho})_{\tau,a}$	$(\frac{\mu}{\rho})_{tot,t}$	$(\frac{\mu}{\rho})_{tot,t-coh}$	$(\frac{\mu}{\rho})_{tot,a}$	$(\frac{\mu}{\rho})_{tot,en}$
.001	.176	.00580	.000342	.0000113	.175	.00580	5.50					2720.	2720.	2720.	2720.	2720.	2720.
L_{III} .001323	.175	.00908	.000452	.0000234	.175	.00908	5.32					1330.	1330.	1330.	1330.	1330.	1330.
L_{II} .001359	.175	.00940	.000464	.0000248	.175	.00940	5.30					6860.	6720.	6860.	6860.	6860.	6720.
.0015	.175	.0109	.000512	.0000319	.175	.0109	5.21					6000.	5880.	6000.	6000.	6000.	5880.
L_I .001530	.175	.0112	.000522	.0000333	.175	.0112	5.19					8280.	8120.	8280.	8280.	8280.	8120.
.002	.175	.0161	.000679	.0000624	.174	.0160	4.89					6630.	6510.	6630.	6630.	6630.	6510.
.003	.174	.0256	.00101	.000148	.174	.0254	4.26					6350.	6240.	6360.	6350.	6350.	6240.
.004	.174	.0341	.00133	.000262	.172	.0338	3.72					7170.	7040.	7180.	7170.	7170.	7040.
.005	.173	.0416	.00166	.000398	.171	.0412	3.26					3380.	3340.	3390.	3380.	3380.	3340.
.006	.172	.0485	.00198	.000555	.170	.0479	2.86					1090.	1090.	1100.	1090.	1090.	1090.
.008	.171	.0605	.00259	.000916	.169	.0596	2.22					497.	494.	501.	497.	497.	494.
.01	.170	.0708	.00318	.00133	.166	.0694	1.74					266.	264.	269.	266.	266.	264.
K .011867	.169	.0790	.00373	.00174	.165	.0772	1.42					160.	159.	163.	160.	160.	159.
.015	.167	.0900	.00461	.00249	.162	.0876	1.05					71.6	71.4	73.9	71.7	71.6	71.4
.02	.164	.102	.00592	.00368	.158	.0981	.719					37.9	37.8	39.7	37.9	37.9	37.8
.03	.158	.116	.00828	.00602	.150	.110	.404					23.0	22.9	24.5	23.1	23.0	22.9
.04	.154	.122	.0102	.00812	.143	.114	.256					188.	109.	190.	188.	188.	109.
.05	.149	.125	.0120	.0100	.137	.116	.176					98.1	65.8	98.9	98.1	98.1	65.8
.06	.145	.125	.0136	.0117	.131	.113	.129					44.0	33.1	44.9	44.1	44.0	33.1
.08	.137	.124	.0161	.0145	.121	.109	.0799					14.2	11.9	14.7	14.3	14.2	11.9
.1	.131	.121	.0180	.0166	.113	.104	.0514					6.35	5.56	6.73	6.47	6.36	5.57
.15	.117	.113	.0214	.0204	.0965	.0924	.0240					3.37	3.04	3.67	3.49	3.38	3.05
.2	.108	.104	.0233	.0226	.0844	.0820	.0137					1.96	1.80	2.22	2.09	1.98	1.81
.3	.0940	.0924	.0252	.0249	.0685	.0675	.00626					.828	.776	1.03	.948	.844	.791
.4	.0836	.0828	.0260	.0256	.0580	.0572	.00355					.434	.412	.606	.555	.452	.429
.5	.0767	.0761	.0261	.0260	.0506	.0502	.00231					.129	.125	.265	.241	.158	.145
.6	.0710	.0706	.0260	.0258	.0449	.0448	.00161					.0541	.0527	.172	.158	.0774	.0753
.8	.0623	.0621	.0255	.0252	.0368	.0370	.000908					.0162	.0160	.119	.109	.0415	.0409
1.	.0560	.0559	.0247	.0241	.0313	.0318	.000584					.00739	.00731	.0940	.0900	.0334	.0329
1.5	.0455	.0454	.0225	.0221	.0230	.0233	.000264	.000434		.000434	.000134	.00418	.00414	.0828	.0803	.0303	.0301
2.	.0388	.0387	.0206	.0200	.0182	.0187	.000150	.00165		.00165	.000776	.00265	.00263	.0748	.0732	.0287	.0285
3.	.0305	.0305	.0176	.0168	.0129	.0137	.0000667	.00450	.0000107	.00451	.00285	.00135	.00134	.0644	.0635	.0268	.0265
4.	.0255	.0255	.0155	.0145	.0100	.0109	.0000374	.00733	.0000438	.00737	.00520	.000844	.000836	.0573	.0567	.0295	.0249
5.	.0220	.0220	.0138	.0128	.00820	.00924	.0000246	.00981	.0000860	.00989	.00737	.000397	.000395	.0469	.0462	.0233	.0227
6.	.0195	.0195	.0125	.0114	.00694	.00804	.0000174	.0117	.000133	.0118	.00916	.000242	.000241	.0408	.0407	.0228	.0211
8.	.0159	.0159	.0106	.00932	.00531	.00656	.0000098	.0149	.000227	.0151	.0121	.000133	.000133	.0353	.0352	.0223	.0198
10.	.0136	.0136	.00924	.00785	.00429	.00573		.0178	.000311	.0182	.0146	.0000884	.0000884	.0330	.0330	.0230	.0199
15.	.0100	.0100	.00713	.00572	.00291	.00432		.0233	.000490	.0238	.0188	.0000666	.0000665	.0320	.0320	.0238	.0203
20.	.00804	.00804	.00586	.00445	.00220	.00359		.0271	.000619	.0277	.0208	.0000531	.0000530	.0313	.0313	.0244	.0207
30.	.00587	.00587	.00438	.00293	.00148	.00293		.0322	.000820	.0330	.0229	.0000378	.0000378	.0311	.0310	.0257	.0214
40.	.00466	.00466	.00354	.00208	.00112	.00258		.0362	.000965	.0371	.0240	.0000288	.0000288	.0318	.0318	.0274	.0225
50.	.00389	.00389	.00300	.00157	.000900	.00232		.0390	.00106	.0400	.0240	.0000183	.0000183	.0338	.0338	.0289	.0245
60.	.00335	.00335	.00260	.00123	.000751	.00212		.0410	.00115	.0421	.0238	.0000138	.0000138	.0358	.0358	.0336	.0252
80.	.00264	.00264	.00208	.000820	.000565	.00182		.0442	.00128	.0455	.0237	.00000920	.00000920	.0389	.0389	.0375	.0259
100.	.00219	.00219	.00174	.000597	.000453	.00160		.0469	.00137	.0482	.0232			.0418	.0418	.0407	.0260
														.0439	.0439	.0430	.0255
														.0456	.0458	.0447	.0250
														.0481	.0481	.0476	.0245
														.0504	.0504	.0500	.0238

34 SELENIUM
(barns/atom)

E (MeV)	$\sigma^{KN}_{inc,t}$	$\sigma^{BD}_{inc,t}$	$\sigma^{KN}_{inc,a}$	$\sigma^{BD}_{inc,a}$	$\sigma^{KN}_{inc,e}$	$\sigma^{BD}_{inc,e}$	σ_{coh}	$\sigma_{\kappa n}$	$\sigma_{\kappa e}$	$\sigma_{\kappa,t}$	$\sigma_{\kappa,a}$	$\sigma_{\gamma,t}$	$\sigma_{\gamma,a}$	$\sigma_{tot,t}$	$\sigma_{tot,t-coh}$	$\sigma_{tot,a}$	$\sigma_{tot,en}$
.001	22.5	.700	.0439	.00136	22.5	.699	727.					389000.	389000.	390000.	389000.	389000.	389000.
L_{III} .001434	22.5	1.24	.0627	.00346	22.4	1.24	695.					153000.	153000.	154000.	153000.	153000.	153000.
												771000.	751000.	772000.	771000.	771000.	751000.
L_{II} .001475	22.5	1.30	.0645	.00373	22.4	1.30	691.					673000.	656000.	674000.	673000.	673000.	656000.
												930000.	907000.	931000.	930000.	930000.	907000.
.0015	22.5	1.33	.0656	.00388	22.4	1.33	689.					894000.	872000.	895000.	894000.	894000.	872000.
L_{I} .001652	22.5	1.53	.0721	.00491	22.4	1.53	677.					719000.	703000.	720000.	719000.	719000.	703000.
												813000.	795000.	814000.	813000.	813000.	795000.
.002	22.4	1.99	.0871	.00772	22.4	1.98	647.					476000.	467000.	477000.	476000.	476000.	467000.
.003	22.4	3.23	.130	.0187	22.2	3.21	562.					154000.	152000.	155000.	154000.	154000.	152000.
.004	22.3	4.34	.171	.0334	22.1	4.31	489.					69500.	68800.	70000.	69500.	69500.	68800.
.005	22.2	5.32	.212	.0510	22.0	5.27	428.					37300.	37000.	37700.	37300.	37300.	37000.
.006	22.1	6.20	.253	.0710	21.8	6.13	377.					22400.	22300.	22800.	22400.	22400.	22300.
.008	21.9	7.72	.332	.117	21.6	7.60	295.					10000.	9950.	10300.	10000.	10000.	9950.
.01	21.8	9.01	.408	.169	21.4	8.84	233.					5310.	5290.	5550.	5320.	5310.	5290.
K .012658	21.6	10.4	.507	.244	21.1	10.2	176.					2710.	2700.	2900.	2720.	2710.	2700.
												21800.	12200.	22000.	21800.	21800.	12200.
.015	21.4	11.4	.591	.315	20.8	11.1	141.					13500.	8460.	13700.	13500.	13500.	8460.
.02	21.0	13.0	.758	.469	20.3	12.5	96.2					6100.	4390.	6210.	6110.	6100.	4390.
.03	20.3	14.7	1.06	.765	19.3	13.9	54.1					1990.	1620.	2060.	2000.	1990.	1620.
.04	19.7	15.5	1.31	1.03	18.4	14.5	34.4					890.	765.	940.	905.	891.	766.
.05	19.1	15.9	1.54	1.28	17.6	14.6	23.7					470.	417.	510.	486.	472.	418.
.06	18.6	16.0	1.74	1.50	16.8	14.5	17.4					276.	250.	309.	292.	278.	252.
.08	17.6	15.8	2.06	1.85	15.5	13.9	10.5					118.	110.	144.	134.	120.	112.
.1	16.8	15.5	2.31	2.14	14.4	13.4	6.90					61.3	57.9	83.7	76.8	63.6	60.0
.15	15.1	14.4	2.74	2.61	12.3	11.8	3.22					18.3	17.6	35.9	32.7	21.0	20.2
.2	13.8	13.4	2.99	2.90	10.8	10.5	1.85					7.75	7.53	23.0	21.1	10.7	10.4
.3	12.0	11.8	3.24	3.18	8.78	8.62	.842					2.32	2.28	15.0	14.1	5.56	5.46
.4	10.8	10.7	3.34	3.31	7.43	7.39	.478					1.06	1.05	12.2	11.8	4.40	4.36
.5	9.83	9.76	3.35	3.33	6.48	6.43	.310					.600	.593	10.7	10.4	3.95	3.92
.6	9.09	9.04	3.34	3.31	5.75	5.73	.217					.380	.376	9.64	9.42	3.72	3.69
.8	7.99	7.96	3.27	3.22	4.72	4.74	.122					.195	.194	8.28	8.15	3.46	3.41
1.	7.18	7.16	3.16	3.09	4.02	4.07	.0787					.121	.120	7.36	7.28	3.28	3.21
1.5	5.83	5.82	2.89	2.83	2.95	2.99	.0352	.0578		.0578	.0179	.0572	.0570	5.97	5.93	3.00	2.90
2.	4.97	4.97	2.64	2.56	2.33	2.41	.0201	.220		.220	.104	.0349	.0348	5.24	5.22	2.89	2.70
3.	3.91	3.91	2.26	2.15	1.65	1.76	.00896	.800	.00137	.801	.380	.0190	.0190	4.54	4.53	2.88	2.55
4.	3.27	3.27	1.98	1.86	1.29	1.41	.00500	.970	.00561	.976	.687	.0126	.0126	4.26	4.26	2.97	2.56
5.	2.82	2.82	1.77	1.63	1.05	1.19	.00328	1.29	.0110	1.30	.968	.00950	.00949	4.13	4.13	3.08	2.61
6.	2.50	2.50	1.61	1.46	.889	1.04	.00231	1.55	.0172	1.57	1.21	.00755	.00754	4.08	4.08	3.19	2.68
8.	2.04	2.04	1.36	1.20	.680	.843	.00133	1.97	.0291	2.00	1.59	.00532	.00532	4.05	4.05	3.37	2.80
10.	1.74	1.74	1.19	1.00	.550	.739		2.35	.0400	2.39	1.92	.00409	.00409	4.13	4.13	3.58	2.92
15.	1.29	1.29	.914	.731	.373	.559		3.09	.0626	3.15	2.48	.00260	.00260	4.44	4.44	4.07	3.21
20.	1.03	1.03	.751	.566	.283	.463		3.57	.0794	3.65	2.72	.00195	.00195	4.68	4.68	4.48	3.29
30.	.752	.752	.562	.373	.190	.379		4.27	.105	4.38	3.02	.00130	.00130	5.13	5.13	4.94	3.39
40.	.598	.598	.454	.264	.143	.334		4.78	.123	4.90	3.15			5.50	5.50	5.35	3.41
50.	.499	.499	.384	.200	.115	.299		5.15	.136	5.29	3.15			5.79	5.79	5.67	3.39
60.	.430	.430	.334	.156	.0962	.274		5.40	.147	5.55	3.11			5.98	5.98	5.88	3.27
80.	.339	.339	.267	.105	.0724	.234		5.81	.163	5.97	3.08			6.31	6.31	6.24	3.18
100.	.282	.282	.223	.0761	.0580	.206		6.20	.175	6.37	3.04			6.65	6.65	6.59	3.12

34 SELENIUM

(cm²/g = 0.007627 x barns/atom)

E (MeV)	$(\frac{\mu}{\rho})^{KN}_{inc,t}$	$(\frac{\mu}{\rho})^{BD}_{inc,t}$	$(\frac{\mu}{\rho})^{KN}_{inc,a}$	$(\frac{\mu}{\rho})^{BD}_{inc,a}$	$(\frac{\mu}{\rho})^{KN}_{inc,s}$	$(\frac{\mu}{\rho})^{BD}_{inc,s}$	$(\frac{\mu}{\rho})_{coh}$	$(\frac{\mu}{\rho})_{\kappa n}$	$(\frac{\mu}{\rho})_{\kappa e}$	$(\frac{\mu}{\rho})_{\kappa,t}$	$(\frac{\mu}{\rho})_{\kappa,a}$	$(\frac{\mu}{\rho})_{\tau,t}$	$(\frac{\mu}{\rho})_{\tau,a}$	$(\frac{\mu}{\rho})_{tot,t}$	$(\frac{\mu}{\rho})_{tot,t-coh}$	$(\frac{\mu}{\rho})_{tot,a}$	$(\frac{\mu}{\rho})_{tot,en}$
.001	.172	.00534	.000335	.0000104	.172	.00533	5.54					2970.	2970.	2970.	2970.	2970.	2970.
L_{III} .001434	.172	.00946	.000478	.0000264	.171	.00946	5.30					1170.	1170.	1170.	1170.	1170.	1170.
L_{II} .001475	.172	.00992	.000492	.0000284	.171	.00992	5.27					5880.	5730.	5890.	5880.	5880.	5730.
.0015	.172	.0101	.000500	.0000296	.171	.0101	5.26					5130.	5000.	5140.	5130.	5130.	5000.
L_{I} .001652	.172	.0117	.000550	.0000374	.171	.0117	5.16					7090.	6920.	7100.	7090.	7090.	6920.
.002	.171	.0152	.000664	.0000589	.171	.0151	4.93					6820.	6650.	6830.	6820.	6820.	6650.
.003	.171	.0246	.000992	.000143	.169	.0245	4.29					5480.	5360.	5490.	5480.	5480.	5360.
.004	.170	.0331	.00130	.000255	.169	.0329	3.73					6200.	6060.	6210.	6200.	6200.	6060.
.005	.169	.0406	.00162	.000389	.168	.0402	3.26					3630.	3560.	3640.	3630.	3630.	3560.
.006	.169	.0473	.00193	.000542	.166	.0468	2.88					1170.	1160.	1180.	1170.	1170.	1160.
.008	.167	.0589	.00253	.000892	.165	.0580	2.25					530.	525.	534.	530.	530.	525.
.01	.166	.0687	.00311	.00129	.163	.0674	1.78					284.	282.	288.	284.	284.	282.
K .012658	.165	.0793	.00387	.00186	.161	.0778	1.34					171.	170.	174.	171.	171.	170.
.015	.163	.0869	.00451	.00240	.159	.0847	1.08					76.3	75.9	78.6	76.3	76.3	75.9
.02	.160	.0992	.00578	.00358	.155	.0953	.734					40.5	40.3	42.3	40.6	40.5	40.3
.03	.155	.112	.00808	.00583	.147	.106	.413					20.7	20.6	22.1	20.7	20.7	20.6
.04	.150	.118	.00999	.00786	.140	.111	.262					166.	93.0	168.	166.	166.	93.0
.05	.146	.121	.0117	.00976	.134	.111	.181					103.	64.5	104.	103.	103.	64.5
.06	.142	.122	.0133	.0114	.128	.111	.133					46.5	33.5	47.4	46.6	46.5	33.5
.08	.134	.121	.0157	.0141	.118	.106	.0801					15.2	12.4	15.7	15.3	15.2	12.4
.1	.128	.118	.0176	.0163	.110	.102	.0526					6.79	5.83	7.17	6.90	6.80	5.84
.15	.115	.110	.0209	.0199	.0938	.0900	.0246					3.58	3.18	3.89	3.71	3.60	3.19
.2	.105	.102	.0228	.0221	.0824	.0801	.0141					2.11	1.91	2.36	2.23	2.12	1.92
.3	.0915	.0900	.0247	.0243	.0670	.0657	.00642					.900	.839	1.10	1.02	.915	.854
.4	.0824	.0816	.0255	.0252	.0567	.0564	.00365					.468	.442	.638	.586	.485	.458
.5	.0750	.0744	.0256	.0254	.0494	.0490	.00236					.140	.134	.274	.249	.160	.154
.6	.0693	.0689	.0255	.0252	.0439	.0437	.00166					.0591	.0574	.175	.161	.0816	.0793
.8	.0609	.0607	.0249	.0246	.0360	.0362	.000930					.0177	.0174	.114	.108	.0424	.0416
1.	.0548	.0546	.0241	.0236	.0307	.0310	.000600					.00808	.00801	.0930	.0900	.0336	.0333
1.5	.0445	.0444	.0220	.0216	.0225	.0228	.000268	.000441		.000441	.000137	.00458	.00452	.0816	.0793	.0301	.0299
2.	.0379	.0379	.0201	.0195	.0178	.0184	.000153	.00168		.00168	.000793	.00290	.00287	.0735	.0718	.0284	.0281
3.	.0298	.0298	.0172	.0164	.0126	.0134	.0000683	.00458	.0000104	.00458	.00290	.00149	.00148	.0632	.0622	.0264	.0260
4.	.0249	.0249	.0151	.0142	.00984	.0108	.0000381	.00740	.0000428	.00744	.00524	.000923	.000915	.0561	.0555	.0250	.0245
5.	.0215	.0215	.0135	.0124	.00801	.00908	.0000250	.00984	.0000839	.00992	.00738	.000436	.000435	.0455	.0452	.0229	.0221
6.	.0191	.0191	.0123	.0111	.00678	.00793	.0000176	.0118	.000131	.0120	.00923	.000266	.000265	.0400	.0398	.0220	.0206
8.	.0156	.0156	.0104	.00915	.00519	.00643	.0000101	.0150	.000222	.0153	.0121	.000145	.000145	.0346	.0346	.0220	.0194
10.	.0133	.0133	.00908	.00763	.00419	.00564		.0179	.000305	.0182	.0146	.0000961	.0000961	.0325	.0325	.0227	.0195
15.	.00984	.00984	.00697	.00558	.00284	.00426		.0236	.000477	.0240	.0189	.0000725	.0000724	.0315	.0315	.0235	.0199
20.	.00786	.00786	.00573	.00432	.00216	.00353		.0272	.000606	.0278	.0207	.0000576	.0000575	.0311	.0311	.0243	.0204
30.	.00574	.00574	.00429	.00284	.00145	.00289		.0326	.000801	.0334	.0230	.0000406	.0000406	.0309	.0309	.0257	.0214
40.	.00456	.00456	.00346	.00201	.00109	.00255		.0365	.000938	.0374	.0240	.0000312	.0000312	.0315	.0315	.0273	.0223
50.	.00381	.00381	.00293	.00153	.000877	.00228		.0393	.00104	.0403	.0240	.0000198	.0000198	.0339	.0339	.0310	.0245
60.	.00328	.00328	.00255	.00119	.000734	.00209		.0412	.00112	.0423	.0237	.0000149	.0000149	.0357	.0357	.0338	.0251
80.	.00259	.00259	.00204	.000801	.000552	.00178		.0443	.00124	.0455	.0235	.00000990	.00000990	.0391	.0391	.0377	.0259
100.	.00215	.00215	.00170	.000580	.000442	.00157		.0473	.00133	.0486	.0232			.0419	.0419	.0408	.0260
														.0442	.0442	.0432	.0256
														.0456	.0456	.0448	.0249
														.0481	.0481	.0476	.0243
														.0507	.0507	.0503	.0238

35 BROMINE
(barns/atom)

E (MeV)	$\sigma^{KN}_{inc,t}$	$\sigma^{BD}_{inc,t}$	$\sigma^{KN}_{inc,a}$	$\sigma^{BD}_{inc,a}$	$\sigma^{KN}_{inc,s}$	$\sigma^{BD}_{inc,s}$	σ_{coh}	$\sigma_{\gamma n}$	$\sigma_{\gamma e}$	$\sigma_{\gamma,t}$	$\sigma_{\gamma,a}$	$\sigma_{\gamma,t}$	$\sigma_{\gamma,a}$	$\sigma_{tot,t}$	$\sigma_{tot,t-coh}$	$\sigma_{tot,a}$	$\sigma_{tot,en}$
.081	23.2	.679	.0452	.00132	23.1	.678	772.					445000.	445000.	446000.	445000.	445000.	445000.
.0015	23.1	1.31	.0675	.00382	23.1	1.31	733.					155000.	155000.	156000.	155000.	155000.	155000.
L_{III} .001551	23.1	1.38	.0698	.00416	23.1	1.38	728.					142000.	142000.	143000.	142000.	142000.	142000.
												698000.	677000.	699000.	698000.	698000.	677000.
L_{II} .001597	23.1	1.44	.0718	.00447	23.1	1.44	724.					608000.	590000.	609000.	608000.	608000.	590000.
												840000.	815000.	841000.	840000.	840000.	815000.
L_{I} .001782	23.1	1.69	.0800	.00585	23.0	1.68	707.					655000.	638000.	656000.	655000.	655000.	638000.
												741000.	721000.	742000.	741000.	741000.	721000.
.002	23.1	1.98	.0896	.00768	23.0	1.97	687.					537000.	524000.	538000.	537000.	537000.	524000.
.003	23.0	3.28	.133	.0190	22.9	3.26	596.					174000.	171000.	175000.	174000.	174000.	171000.
.004	22.9	4.44	.176	.0342	22.7	4.41	518.					78600.	77700.	79100.	78600.	78600.	77700.
.005	22.8	5.46	.219	.0523	22.6	5.41	453.					42200.	41800.	42700.	42200.	42200.	41800.
.006	22.7	6.37	.260	.0729	22.5	6.30	399.					25400.	25200.	25800.	25400.	25400.	25200.
.008	22.6	7.92	.342	.120	22.2	7.80	314.					11400.	11300.	11700.	11400.	11400.	11300.
.01	22.4	9.22	.420	.173	22.0	9.05	250.					6040.	6010.	6300.	6050.	6040.	6010.
K .013474	22.1	11.0	.552	.274	21.6	10.7	174.					2570.	2560.	2760.	2580.	2570.	2560.
												20300.	10900.	20500.	20300.	20300.	10900.
.015	22.0	11.6	.609	.321	21.4	11.3	152.					15100.	8810.	15300.	15100.	15100.	8810.
.02	21.6	13.2	.780	.476	20.8	12.7	103.					6800.	4680.	6920.	6810.	6800.	4680.
.03	20.9	15.1	1.09	.786	19.8	14.3	58.0					2210.	1750.	2280.	2230.	2210.	1750.
.04	20.3	15.9	1.35	1.06	18.9	14.8	37.0					990.	835.	1040.	1010.	991.	836.
.05	19.6	16.3	1.59	1.32	18.1	15.0	25.5					527.	461.	569.	563.	529.	462.
.06	19.1	16.4	1.79	1.54	17.3	14.9	18.7					310.	278.	345.	326.	312.	280.
.08	18.1	16.2	2.12	1.90	16.0	14.3	11.3					133.	123.	160.	149.	135.	125.
.1	17.2	15.9	2.38	2.19	14.9	13.7	7.43					69.5	65.2	92.8	85.4	71.9	67.4
.15	15.5	14.8	2.82	2.69	12.7	12.1	3.47					20.9	20.0	39.2	35.7	23.7	22.7
.2	14.2	13.8	3.08	2.98	11.2	10.8	2.00					8.85	8.57	24.6	22.6	11.9	11.5
.3	12.4	12.2	3.33	3.29	9.04	8.91	.907					2.66	2.60	15.8	14.9	5.99	5.89
.4	11.1	11.0	3.43	3.40	7.65	7.60	.515					1.20	1.18	12.7	12.2	4.63	4.58
.5	10.1	10.0	3.45	3.41	6.67	6.59	.334					.682	.673	11.0	10.7	4.13	4.08
.6	9.36	9.31	3.44	3.41	5.92	5.90	.233					.439	.434	9.98	9.75	3.88	3.84
.8	8.22	8.19	3.36	3.32	4.86	4.87	.132					.222	.220	8.54	8.41	3.58	3.54
1.	7.39	7.37	3.25	3.18	4.14	4.19	.0847					.139	.138	7.59	7.51	3.39	3.32
1.5	6.01	6.00	2.97	2.91	3.03	3.09	.0380	.0617		.0617	.0191	.0658	.0655	6.17	6.13	3.10	2.99
2.	5.12	5.12	2.72	2.64	2.40	2.48	.0216	.233		.233	.110	.0400	.0399	5.41	5.39	2.99	2.79
3.	4.03	4.03	2.32	2.21	1.70	1.82	.00965	.636	.00141	.637	.402	.0218	.0218	4.70	4.69	2.98	2.63
4.	3.37	3.37	2.04	1.92	1.32	1.45	.00538	1.03	.00579	1.04	.728	.0145	.0145	4.43	4.42	3.09	2.66
5.	2.91	2.91	1.83	1.68	1.08	1.23	.00351	1.37	.0113	1.38	1.03	.0109	.0109	4.30	4.30	3.22	2.72
6.	2.57	2.57	1.65	1.49	.915	1.08	.00247	1.64	.0177	1.66	1.28	.00865	.00864	4.24	4.24	3.32	2.78
8.	2.10	2.10	1.40	1.23	.700	.874	.00143	2.10	.0300	2.13	1.69	.00612	.00612	4.24	4.24	3.54	2.93
10.	1.79	1.79	1.22	1.02	.567	.766		2.50	.0411	2.54	2.04	.00469	.00469	4.33	4.33	3.76	3.06
15.	1.33	1.33	.941	.749	.384	.581		3.26	.0643	3.32	2.60	.00300	.00300	4.65	4.65	4.26	3.35
20.	1.06	1.06	.773	.579	.291	.481		3.77	.0819	3.85	2.86	.00222	.00222	4.91	4.91	4.63	3.44
30.	.774	.774	.579	.380	.196	.394		4.51	.108	4.62	3.17	.00145	.00145	5.40	5.40	5.20	3.55
40.	.615	.615	.468	.270	.148	.345		5.04	.127	5.17	3.28	.00108	.00108	5.79	5.79	5.64	3.55
50.	.514	.514	.395	.205	.118	.309		5.43	.140	5.57	3.29			6.08	6.08	5.96	3.50
60.	.442	.442	.343	.160	.0990	.282		5.70	.151	5.85	3.25			6.29	6.29	6.19	3.41
80.	.349	.349	.274	.107	.0745	.242		6.18	.168	6.35	3.24			6.70	6.70	6.62	3.35
100.	.290	.290	.230	.0777	.0597	.212		6.52	.180	6.70	3.16			6.99	6.99	6.93	3.24

35 BROMINE

(cm^2/g = 0.007537 x barns/atom)

E (MeV)	$(\frac{\mu}{\rho})^{KN}_{inc,t}$	$(\frac{\mu}{\rho})^{BD}_{inc,t}$	$(\frac{\mu}{\rho})^{KN}_{inc,a}$	$(\frac{\mu}{\rho})^{BD}_{inc,a}$	$(\frac{\mu}{\rho})^{KN}_{inc,s}$	$(\frac{\mu}{\rho})^{BD}_{inc,s}$	$(\frac{\mu}{\rho})_{coh}$	$(\frac{\mu}{\rho})_{\kappa_n}$	$(\frac{\mu}{\rho})_{\kappa_e}$	$(\frac{\mu}{\rho})_{\kappa,t}$	$(\frac{\mu}{\rho})_{\kappa,a}$	$(\frac{\mu}{\rho})_{\tau,t}$	$(\frac{\mu}{\rho})_{\tau,a}$	$(\frac{\mu}{\rho})_{tot,t}$	$(\frac{\mu}{\rho})_{tot,t-coh}$	$(\frac{\mu}{\rho})_{tot,a}$	$(\frac{\mu}{\rho})_{tot,en}$
.001	.175	.00512	.000341	.0000100	.174	.00511	5.82					3350.	3350.	3360.	3350.	3350.	3350.
.0015	.174	.00987	.000509	.0000288	.174	.00987	5.52					1170.	1170.	1180.	1170.	1170.	1170.
L_{III} .001551	.174	.0104	.000526	.0000314	.174	.0104	5.49					1070.	1070.	1080.	1070.	1070.	1070.
												5260.	5100.	5270.	5260.	5260.	5100.
L_{II} .001597	.174	.0109	.000541	.0000337	.174	.0109	5.46					4580.	4450.	4590.	4580.	4580.	4450.
												6330.	6140.	6340.	6330.	6330.	6140.
L_{I} .001782	.174	.0127	.000603	.0000441	.173	.0127	5.33					4940.	4810.	4940.	4940.	4940.	4810.
												5580.	5430.	5590.	5580.	5580.	5430.
.002	.174	.0149	.000675	.0000579	.173	.0148	5.18					4050.	3950.	4050.	4050.	4050.	3950.
.003	.173	.0247	.00100	.000143	.173	.0246	4.49					1310.	1290.	1320.	1310.	1310.	1290.
.004	.173	.0335	.00133	.000258	.171	.0332	3.90					592.	586.	596.	592.	592.	586.
.005	.172	.0412	.00165	.000394	.170	.0408	3.41					318.	315.	322.	318.	318.	315.
.006	.171	.0480	.00196	.000549	.170	.0475	3.01					191.	190.	194.	191.	191.	190.
.008	.170	.0597	.00258	.000904	.167	.0588	2.37					85.9	85.2	88.2	85.9	85.9	85.2
.01	.169	.0695	.00317	.00130	.166	.0682	1.88					45.5	45.3	47.5	45.6	45.5	45.3
K .013474	.167	.0829	.00416	.00207	.163	.0806	1.31					19.4	19.3	20.8	19.4	19.4	19.3
												153.	82.2	155.	153.	153.	82.2
.015	.166	.0874	.00459	.00242	.161	.0852	1.15					114.	66.4	115.	114.	114.	66.4
.02	.163	.0995	.00588	.00359	.157	.0957	.776					51.3	35.3	52.2	51.3	51.3	35.3
.03	.158	.114	.00822	.00592	.149	.108	.437					16.7	13.2	17.2	16.8	16.7	13.2
.04	.153	.120	.0102	.00799	.142	.112	.279					7.46	6.29	7.84	7.61	7.47	6.30
.05	.148	.123	.0120	.00995	.136	.113	.192					3.97	3.47	4.29	4.09	3.99	3.48
.06	.144	.124	.0135	.0116	.130	.112	.141					2.34	2.10	2.60	2.46	2.35	2.11
.08	.136	.122	.0160	.0143	.121	.108	.0852					1.00	.927	1.21	1.12	1.02	.942
.1	.130	.120	.0179	.0165	.112	.103	.0560					.524	.491	.699	.644	.542	.508
.15	.117	.112	.0213	.0203	.0957	.0912	.0262					.158	.151	.295	.269	.179	.171
.2	.107	.104	.0232	.0225	.0844	.0814	.0151					.0667	.0646	.185	.170	.0897	.0867
.3	.0935	.0920	.0251	.0248	.0681	.0672	.00684					.0200	.0196	.119	.112	.0451	.0444
.4	.0837	.0829	.0259	.0256	.0577	.0573	.00388					.00904	.00889	.0957	.0920	.0349	.0345
.5	.0761	.0754	.0260	.0257	.0503	.0497	.00252					.00514	.00507	.0829	.0806	.0311	.0308
.6	.0705	.0702	.0259	.0257	.0446	.0445	.00176					.00331	.00327	.0752	.0735	.0292	.0289
.8	.0620	.0617	.0253	.0250	.0366	.0367	.000995					.00167	.00166	.0644	.0634	.0270	.0267
1.	.0557	.0555	.0245	.0240	.0312	.0316	.000638					.00105	.00104	.0572	.0566	.0256	.0250
1.5	.0453	.0452	.0224	.0219	.0228	.0233	.000286	.000465		.000465	.000144	.000496	.000494	.0465	.0462	.0234	.0225
2.	.0386	.0386	.0205	.0199	.0181	.0187	.000163	.00176		.00176	.000829	.000301	.000301	.0408	.0406	.0225	.0210
3.	.0304	.0304	.0175	.0167	.0128	.0137	.0000727	.00479	.0000106	.00480	.00303	.000164	.000164	.0354	.0353	.0225	.0198
4.	.0254	.0254	.0154	.0145	.00995	.0109	.0000405	.00776	.0000436	.00784	.00549	.000109	.000109	.0334	.0333	.0233	.0200
5.	.0219	.0219	.0138	.0127	.00814	.00927	.0000265	.0103	.0000852	.0104	.00776	.0000822	.0000822	.0324	.0324	.0243	.0205
6.	.0194	.0194	.0124	.0112	.00690	.00814	.0000186	.0124	.000133	.0125	.00965	.0000652	.0000651	.0320	.0320	.0250	.0210
8.	.0158	.0158	.0106	.00927	.00528	.00659	.0000108	.0158	.000226	.0161	.0127	.0000461	.0000461	.0320	.0320	.0267	.0221
10.	.0135	.0135	.00920	.00769	.00427	.00577		.0188	.000310	.0191	.0154	.0000353	.0000353	.0326	.0326	.0283	.0231
15.	.0100	.0100	.00709	.00565	.00289	.00438		.0246	.000485	.0250	.0196	.0000226	.0000226	.0350	.0350	.0321	.0252
20.	.00799	.00799	.00583	.00436	.00219	.00363		.0284	.000617	.0290	.0216	.0000167	.0000167	.0370	.0370	.0349	.0259
30.	.00583	.00583	.00436	.00286	.00148	.00297		.0340	.000814	.0348	.0239	.0000109	.0000109	.0407	.0407	.0392	.0268
40.	.00464	.00464	.00353	.00203	.00112	.00260		.0380	.000957	.0390	.0247	.00000810	.00000810	.0436	.0436	.0425	.0268
50.	.00387	.00387	.00298	.00155	.000889	.00233		.0409	.00106	.0420	.0248			.0458	.0458	.0449	.0264
60.	.00333	.00333	.00259	.00121	.000746	.00213		.0430	.00114	.0441	.0245			.0474	.0474	.0467	.0257
80.	.00263	.00263	.00207	.000806	.000562	.00182		.0466	.00127	.0479	.0244			.0505	.0505	.0499	.0252
100.	.00219	.00219	.00173	.000586	.000450	.00160		.0491	.00136	.0505	.0238			.0527	.0527	.0522	.0244

36 KRYPTON
(barns/atom)

E (MeV)	$\sigma^{KN}_{inc,t}$	$\sigma^{BD}_{inc,t}$	$\sigma^{KN}_{inc,a}$	$\sigma^{BD}_{inc,a}$	$\sigma^{KN}_{inc,s}$	$\sigma^{BD}_{inc,s}$	σ_{coh}	σ_{κ_n}	σ_{κ_e}	$\sigma_{\kappa,t}$	$\sigma_{\kappa,a}$	$\sigma_{\gamma,t}$	$\sigma_{\gamma,a}$	$\sigma_{tot,t}$	$\sigma_{tot,t-coh}$	$\sigma_{tot,a}$	$\sigma_{tot,en}$
.001	23.9	.670	.0465	.00131	23.8	.669	818.					506000.	506000.	507000.	506000.	506000.	506000.
.0015	23.8	1.31	.0694	.00382	23.7	1.31	778.					176000.	176000.	177000.	176000.	176000.	176000.
L_{III} .001675	23.8	1.55	.0774	.00505	23.7	1.54	762.					132000.	132000.	133000.	132000.	132000.	132000.
L_{II} .001727	23.8	1.62	.0798	.00544	23.7	1.61	757.					633000.	610000.	634000.	633000.	633000.	610000.
L_{I} .001921	23.8	1.89	.0886	.00705	23.7	1.88	738.					550000.	531000.	551000.	550000.	550000.	531000.
												760000.	733000.	761000.	760000.	760000.	733000.
												596000.	577000.	597000.	596000.	596000.	577000.
												676000.	654000.	677000.	676000.	676000.	654000.
.002	23.8	2.00	.0922	.00776	23.7	1.99	730.					599000.	580000.	600000.	599000.	599000.	580000.
.003	23.7	3.34	.137	.0194	23.5	3.32	633.					194000.	190000.	195000.	194000.	194000.	190000.
.004	23.6	4.55	.181	.0350	23.4	4.51	548.					88300.	86900.	88900.	88300.	88300.	86900.
.005	23.5	5.62	.225	.0538	23.3	5.57	478.					47500.	46900.	48000.	47500.	47500.	46900.
.006	23.4	6.55	.268	.075	23.1	6.48	421.					28700.	28400.	29100.	28700.	28700.	28400.
.008	23.2	8.11	.352	.123	22.9	7.99	333.					12900.	12800.	13200.	12900.	12900.	12800.
.01	23.1	9.42	.432	.177	22.6	9.24	266.					6830.	6790.	7110.	6840.	6830.	6790.
K .014323	22.7	11.6	.599	.306	22.1	11.3	173.					2440.	2430.	2620.	2450.	2440.	2430.
												19000.	9790.	19200.	19000.	19000.	9790.
.015	22.6	11.9	.626	.329	22.0	11.6	163.					16700.	8970.	16900.	16700.	16700.	8970.
.02	22.2	13.5	.802	.487	21.4	13.0	110.					7520.	4910.	7640.	7530.	7520.	4910.
.03	21.5	15.4	1.12	.801	20.4	14.6	62.2					2460.	1890.	2540.	2480.	2460.	1890.
.04	20.8	16.3	1.39	1.09	19.4	15.2	39.7					1100.	909.	1160.	1120.	1100.	910.
.05	20.2	16.7	1.63	1.35	18.6	15.4	27.5					587.	506.	631.	604.	589.	507.
.06	19.6	16.8	1.84	1.58	17.8	15.2	20.1					349.	309.	386.	366.	351.	311.
.08	18.6	16.7	2.18	1.96	16.4	14.7	12.1					150.	137.	179.	167.	152.	139.
.1	17.7	16.3	2.45	2.25	15.3	14.1	8.00					78.2	72.8	102.	94.5	80.6	75.1
.15	16.0	15.2	2.90	2.76	13.1	12.4	3.73					23.4	22.3	42.3	38.6	26.3	25.1
.2	14.6	14.2	3.16	3.07	11.5	11.1	2.15					9.95	9.60	26.3	24.1	13.1	12.7
.3	12.7	12.5	3.43	3.37	9.30	9.13	.976					3.01	2.94	16.5	15.5	6.44	6.31
.4	11.4	11.3	3.53	3.49	7.87	7.81	.555					1.37	1.35	13.2	12.7	4.90	4.84
.5	10.4	10.3	3.55	3.51	6.86	6.79	.360					.776	.765	11.4	11.1	4.33	4.28
.6	9.63	9.57	3.54	3.50	6.09	6.07	.250					.499	.493	10.3	10.1	4.04	3.99
.8	8.46	8.43	3.46	3.41	5.00	5.02	.141					.252	.250	8.82	8.68	3.71	3.66
1.	7.60	7.58	3.34	3.27	4.26	4.31	.0910					.158	.157	7.83	7.74	3.50	3.43
1.5	6.18	6.17	3.06	2.99	3.12	3.18	.0409	.0658		.0658	.0204	.0742	.0739	6.35	6.31	3.20	3.08
2.	5.27	5.26	2.80	2.71	2.47	2.55	.0232	.249		.249	.117	.0454	.0452	5.58	5.55	3.09	2.87
3.	4.14	4.14	2.39	2.27	1.75	1.87	.0103	.672	.00145	.673	.424	.0250	.0249	4.85	4.84	3.09	2.72
4.	3.46	3.46	2.10	1.97	1.36	1.49	.00579	1.10	.00595	1.11	.776	.0165	.0165	4.59	4.59	3.23	2.76
5.	2.99	2.99	1.88	1.72	1.11	1.27	.00375	1.45	.0117	1.46	1.08	.0123	.0123	4.47	4.46	3.35	2.81
6.	2.64	2.64	1.70	1.53	.941	1.11	.00263	1.74	.0182	1.76	1.35	.00977	.00976	4.41	4.41	3.47	2.89
8.	2.16	2.16	1.44	1.26	.720	.903	.00153	2.20	.0308	2.23	1.76	.00693	.00692	4.40	4.40	3.68	3.03
10.	1.84	1.84	1.26	1.05	.583	.791		2.62	.0423	2.66	2.13	.00530	.00530	4.51	4.51	3.93	3.19
15.	1.36	1.36	.968	.762	.395	.598		3.44	.0661	3.51	2.73	.00339	.00339	4.87	4.87	4.48	3.50
20.	1.09	1.09	.795	.590	.299	.500		3.99	.0841	4.07	3.01	.00250	.00250	5.16	5.16	4.87	3.80
30.	.796	.796	.595	.389	.201	.407		4.78	.111	4.89	3.34	.00165	.00165	5.69	5.69	5.49	3.73
40.	.633	.633	.481	.275	.152	.358		5.31	.130	5.44	3.44	.00122	.00122	6.07	6.07	5.92	3.72
50.	.528	.528	.407	.208	.122	.320		5.74	.143	5.88	3.44			6.41	6.41	6.29	3.65
60.	.455	.455	.353	.163	.102	.292		6.01	.155	6.16	3.40			6.61	6.61	6.51	3.56
80.	.359	.359	.282	.109	.0766	.250		6.50	.172	6.67	3.38			7.03	7.03	6.95	3.49
100.	.298	.298	.237	.0796	.0615	.218		6.90	.185	7.08	3.32			7.38	7.38	7.32	3.40

36 KRYPTON

(cm^2/g = 0.007187 x barns/atom)

E (MeV)	$(\frac{\mu}{\rho})^{KN}_{inc,t}$	$(\frac{\mu}{\rho})^{BD}_{inc,t}$	$(\frac{\mu}{\rho})^{KN}_{inc,a}$	$(\frac{\mu}{\rho})^{BD}_{inc,a}$	$(\frac{\mu}{\rho})^{KN}_{inc,s}$	$(\frac{\mu}{\rho})^{BD}_{inc,s}$	$(\frac{\mu}{\rho})_{coh}$	$(\frac{\mu}{\rho})_{\kappa n}$	$(\frac{\mu}{\rho})_{\kappa e}$	$(\frac{\mu}{\rho})_{\kappa,t}$	$(\frac{\mu}{\rho})_{\kappa,a}$	$(\frac{\mu}{\rho})_{\tau,t}$	$(\frac{\mu}{\rho})_{\tau,a}$	$(\frac{\mu}{\rho})_{tot,t}$	$(\frac{\mu}{\rho})_{tot,t-coh}$	$(\frac{\mu}{\rho})_{tot,a}$	$(\frac{\mu}{\rho})_{tot,en}$
.001	.172	.00482	.000334	.00000940	.171	.00481	5.88					3640.	3640.	3640.	3640.	3640.	3640.
.0015	.171	.00941	.000499	.0000275	.170	.00941	5.59					1260.	1260.	1270.	1260.	1260.	1260.
L_{III} .001675	.171	.0111	.000556	.0000363	.170	.0111	5.48					949.	949.	956.	949.	949.	949.
												4550.	4380.	4560.	4550.	4550.	4380.
L_{II} .001727	.171	.0116	.000574	.0000391	.170	.0116	5.44					3950.	3820.	3960.	3950.	3950.	3820.
												5460.	5270.	5470.	5460.	5460.	5270.
L_{I} .001921	.171	.0136	.000637	.0000507	.170	.0135	5.30					4280.	4150.	4290.	4280.	4280.	4150.
												4860.	4700.	4870.	4860.	4860.	4700.
.002	.171	.0144	.000663	.0000558	.170	.0143	5.25					4310.	4170.	4310.	4310.	4310.	4170.
.003	.170	.0240	.000985	.000139	.169	.0239	4.55					1390.	1370.	1400.	1390.	1390.	1370.
.004	.170	.0327	.00130	.000252	.168	.0324	3.94					635.	625.	639.	635.	635.	625.
.005	.169	.0404	.00162	.000387	.167	.0400	3.44					341.	337.	345.	341.	341.	337.
.006	.168	.0471	.00193	.000539	.166	.0466	3.03					206.	204.	209.	206.	206.	204.
.008	.167	.0583	.00253	.000884	.165	.0574	2.39					92.7	92.0	94.9	92.7	92.7	92.0
.01	.166	.0677	.00310	.00127	.162	.0664	1.91					49.1	48.8	51.1	49.2	49.1	48.8
K .014323	.163	.0834	.00431	.00220	.159	.0812	1.24					17.5	17.5	18.8	17.6	17.5	17.5
												137.	70.4	138.	137.	137.	70.4
.015	.162	.0855	.00456	.00236	.158	.0834	1.17					120.	64.5	121.	120.	120.	64.5
.02	.160	.0970	.00576	.00350	.154	.0934	.791					54.0	35.3	54.9	54.1	54.0	35.3
.03	.155	.111	.00805	.00576	.147	.105	.447					17.7	13.6	18.3	17.8	17.7	13.6
.04	.149	.117	.00999	.00783	.139	.109	.285					7.91	6.53	8.36	8.05	7.91	6.54
.05	.145	.120	.0117	.00970	.134	.111	.198					4.22	3.64	4.53	4.36	4.23	3.64
.06	.141	.121	.0132	.0114	.128	.109	.144					2.51	2.22	2.77	2.63	2.52	2.24
.08	.134	.120	.0157	.0141	.118	.106	.0870					1.08	.985	1.29	1.20	1.09	.999
.1	.127	.117	.0176	.0162	.110	.101	.0575					.562	.523	.733	.679	.579	.548
.15	.115	.109	.0208	.0198	.0941	.0891	.0268					.168	.160	.304	.277	.189	.180
.2	.105	.102	.0227	.0221	.0827	.0798	.0155					.0715	.0690	.189	.173	.0941	.0913
.3	.0913	.0898	.0247	.0242	.0668	.0656	.00701					.0216	.0211	.119	.111	.0463	.0453
.4	.0819	.0812	.0254	.0251	.0566	.0561	.00399					.00985	.00970	.0949	.0913	.0352	.0348
.5	.0747	.0740	.0255	.0252	.0493	.0488	.00259					.00558	.00550	.0819	.0798	.0311	.0308
.6	.0692	.0688	.0254	.0252	.0438	.0436	.00180					.00359	.00354	.0740	.0726	.0290	.0287
.8	.0608	.0606	.0249	.0245	.0359	.0361	.00101					.00181	.00180	.0634	.0624	.0267	.0263
1.	.0546	.0545	.0240	.0238	.0306	.0310	.000684					.00114	.00113	.0563	.0556	.0252	.0247
1.5	.0444	.0443	.0220	.0219	.0224	.0229	.000294	.000473		.000473	.000147	.000533	.000531	.0456	.0453	.0230	.0221
2.	.0379	.0378	.0201	.0195	.0178	.0183	.000167	.00179		.00179	.000841	.000326	.000325	.0401	.0399	.0222	.0206
3.	.0298	.0298	.0172	.0163	.0126	.0134	.0000748	.00483	.0000104	.00484	.00305	.000180	.000179	.0349	.0348	.0222	.0195
4.	.0249	.0249	.0151	.0142	.00977	.0107	.0000416	.00791	.0000428	.00798	.00558	.000119	.000119	.0330	.0330	.0232	.0198
5.	.0215	.0215	.0135	.0124	.00798	.00913	.0000270	.0104	.0000841	.0105	.00776	.0000884	.0000884	.0321	.0321	.0241	.0202
6.	.0190	.0190	.0122	.0110	.00676	.00798	.0000189	.0125	.0000131	.0126	.00970	.0000702	.0000701	.0317	.0317	.0249	.0208
8.	.0155	.0155	.0103	.00906	.00517	.00649	.0000110	.0158	.0000221	.0160	.0126	.0000498	.0000497	.0316	.0316	.0264	.0218
10.	.0132	.0132	.00906	.00755	.00419	.00568		.0188	.0000304	.0191	.0153	.0000381	.0000381	.0324	.0324	.0282	.0229
15.	.00977	.00977	.00696	.00548	.00284	.00430		.0247	.0000475	.0252	.0196	.0000244	.0000244	.0350	.0350	.0322	.0252
20.	.00783	.00783	.00571	.00424	.00215	.00359		.0287	.0000604	.0293	.0216	.0000180	.0000180	.0371	.0371	.0350	.0259
30.	.00572	.00572	.00428	.00280	.00144	.00293		.0344	.0000798	.0351	.0240	.0000119	.0000119	.0409	.0409	.0395	.0268
40.	.00455	.00455	.00346	.00198	.00109	.00257		.0382	.0000934	.0391	.0247	.00000880	.00000880	.0436	.0436	.0425	.0267
50.	.00379	.00379	.00293	.00149	.0000877	.00230		.0413	.00103	.0423	.0247			.0461	.0461	.0452	.0262
60.	.00327	.00327	.00254	.00117	.0000733	.00210		.0432	.00111	.0443	.0244			.0475	.0475	.0468	.0256
80.	.00258	.00258	.00203	.0000783	.0000551	.00180		.0467	.00124	.0479	.0243			.0505	.0505	.0499	.0251
100.	.00214	.00214	.00170	.0000572	.0000442	.00157		.0496	.00133	.0509	.0239			.0530	.0530	.0526	.0244

37 RUBIDIUM
(barns/atom)

E (MeV)	KN $\sigma_{inc,t}$	BD $\sigma_{inc,t}$	KN $\sigma_{inc,a}$	BD $\sigma_{inc,a}$	KN $\sigma_{inc,s}$	BD $\sigma_{inc,s}$	σ_{coh}	$\sigma_{\gamma n}$	$\sigma_{\gamma e}$	$\sigma_{\gamma,t}$	$\sigma_{\gamma,a}$	$\sigma_{\gamma,t}$	$\sigma_{\gamma,a}$	$\sigma_{tot,t}$	$\sigma_{tot,t-coh}$	$\sigma_{tot,a}$	$\sigma_{tot,en}$
.001	24.5	.990	.0478	.00193	24.5	.988	850.					574000.	574000.	575000.	574000.	574000.	574000.
.0015	24.5	1.64	.0714	.00478	24.4	1.64	805.					199000.	199000.	200000.	199000.	199000.	199000.
L_{III} .001805	24.4	2.04	.0857	.00715	24.4	2.03	776.					123000.	123000.	124000.	123000.	123000.	123000.
												576000.	553000.	577000.	576000.	576000.	553000.
L_{II} .001863	24.4	2.12	.0884	.00767	24.3	2.11	770.					500000.	480000.	501000.	500000.	500000.	480000.
												690000.	663000.	691000.	690000.	690000.	663000.
.002	24.4	2.30	.0948	.00892	24.3	2.29	757.					587000.	565000.	588000.	587000.	587000.	565000.
L_I .002065	24.4	2.39	.0978	.00957	24.3	2.38	750.					545000.	525000.	546000.	545000.	545000.	525000.
												618000.	596000.	619000.	618000.	618000.	596000.
.003	24.3	3.59	.141	.0208	24.2	3.57	660.					219000.	214000.	220000.	219000.	219000.	214000.
.004	24.2	4.78	.186	.0368	24.0	4.74	574.					98800.	96900.	99400.	98800.	98800.	96900.
.005	24.1	5.84	.231	.0559	23.9	5.78	501.					53300.	52500.	53800.	53300.	53300.	52500.
.006	24.0	6.79	.275	.0777	23.8	6.71	442.					32200.	31800.	32600.	32200.	32200.	31800.
.008	23.9	8.37	.361	.127	23.5	8.24	350.					14400.	14300.	14800.	14400.	14400.	14300.
.01	23.7	9.67	.444	.181	23.3	9.49	282.					7710.	7650.	8000.	7720.	7710.	7650.
.015	23.3	12.1	.643	.335	22.6	11.8	173.					2400.	2390.	2500.	2410.	2400.	2390.
K .015200	23.3	12.2	.649	.341	22.6	11.9	170.					2320.	2310.	2500.	2330.	2320.	2310.
												17800.	8860.	18000.	17800.	17800.	8860.
.02	22.9	13.8	.825	.498	22.0	13.3	118.					8350.	5160.	8480.	8360.	8350.	5160.
.03	22.1	15.7	1.15	.817	21.0	14.9	66.3					2710.	2020.	2790.	2730.	2710.	2020.
.04	21.4	16.7	1.43	1.11	20.0	15.6	42.5					1220.	987.	1280.	1240.	1220.	988.
.05	20.8	17.1	1.68	1.38	19.1	15.7	29.4					653.	553.	699.	670.	655.	554.
.06	20.2	17.2	1.89	1.61	18.3	15.6	21.6					388.	339.	427.	405.	390.	341.
.08	19.1	17.1	2.24	2.00	16.9	15.1	13.0					167.	151.	197.	184.	169.	153.
.1	18.2	16.7	2.52	2.30	15.7	14.4	8.57					87.5	80.8	113.	104.	90.0	83.1
.15	16.4	15.7	2.98	2.85	13.4	12.9	4.00					26.2	24.9	45.9	41.9	29.2	27.7
.2	15.0	14.6	3.25	3.16	11.8	11.4	2.30					11.2	10.8	28.1	25.8	14.4	14.0
.3	13.1	12.9	3.53	3.48	9.55	9.42	1.05					3.40	3.31	17.3	16.3	6.93	6.79
.4	11.7	11.6	3.63	3.58	8.09	8.02	.594					1.55	1.52	13.7	13.1	5.18	5.10
.5	10.7	10.6	3.65	3.61	7.05	6.99	.386					.882	.869	11.9	11.5	4.53	4.48
.6	9.90	9.84	3.64	3.60	6.26	6.24	.269					.567	.560	10.7	10.4	4.21	4.16
.8	8.69	8.66	3.55	3.50	5.14	5.16	.151					.289	.286	9.10	8.95	3.84	3.79
1.	7.81	7.79	3.44	3.36	4.38	4.43	.0975					.180	.179	8.07	7.97	3.62	3.54
1.5	6.35	6.34	3.14	3.07	3.21	3.27	.0439	.0700		.0700	.0217	.0843	.0839	6.54	6.49	3.29	3.18
2.	5.41	5.41	2.87	2.79	2.54	2.62	.0250	.263		.263	.124	.0517	.0515	5.75	5.72	3.18	2.97
3.	4.26	4.26	2.46	2.33	1.80	1.93	.0112	.712	.00149	.713	.449	.0282	.0281	5.01	5.00	3.20	2.81
4.	3.56	3.56	2.16	2.02	1.40	1.56	.00623	1.16	.00611	1.17	.817	.0185	.0185	4.75	4.75	3.35	2.86
5.	3.07	3.07	1.93	1.77	1.14	1.30	.00402	1.54	.0120	1.55	1.15	.0138	.0138	4.64	4.63	3.49	2.93
6.	2.72	2.72	1.75	1.57	.967	1.15	.00281	1.83	.0187	1.85	1.42	.0110	.0110	4.58	4.58	3.61	3.00
8.	2.22	2.22	1.48	1.29	.740	.932	.00163	2.32	.0317	2.35	1.86	.00782	.00781	4.58	4.58	3.84	3.16
10.	1.89	1.89	1.29	1.07	.599	.816	.00105	2.79	.0434	2.83	2.26	.00597	.00597	4.73	4.73	4.13	3.34
15.	1.40	1.40	.995	.780	.406	.620		3.62	.0680	3.69	2.87	.00381	.00381	5.09	5.09	4.69	3.65
20.	1.12	1.12	.817	.604	.307	.516		4.20	.0865	4.29	3.15	.00282	.00282	5.41	5.41	5.11	3.76
30.	.818	.818	.612	.396	.207	.422		5.01	.113	5.12	3.48	.00185	.00185	5.94	5.94	5.73	3.88
40.	.650	.650	.494	.280	.156	.370		5.61	.133	5.74	3.60	.00137	.00137	6.39	6.39	6.24	3.88
50.	.543	.543	.418	.212	.125	.331		6.05	.148	6.20	3.61	.00109	.00109	6.74	6.74	6.62	3.82
60.	.468	.468	.363	.167	.105	.301		6.35	.160	6.51	3.55			6.98	6.98	6.87	3.72
80.	.369	.369	.290	.111	.0788	.258		6.85	.177	7.03	3.52			7.40	7.40	7.32	3.63
100.	.306	.306	.243	.0808	.0632	.225		7.28	.190	7.47	3.45			7.78	7.78	7.71	3.53

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(cm^2/g = 0.007046 x barns/atom)

E (MeV)	$(\frac{\mu}{\rho})^{KN}_{inc,t}$	$(\frac{\mu}{\rho})^{BD}_{inc,t}$	$(\frac{\mu}{\rho})^{KN}_{inc,a}$	$(\frac{\mu}{\rho})^{BD}_{inc,a}$	$(\frac{\mu}{\rho})^{KN}_{inc,s}$	$(\frac{\mu}{\rho})^{BD}_{inc,s}$	$(\frac{\mu}{\rho})_{coh}$	$(\frac{\mu}{\rho})_{\kappa n}$	$(\frac{\mu}{\rho})_{\kappa e}$	$(\frac{\mu}{\rho})_{\kappa,t}$	$(\frac{\mu}{\rho})_{\kappa,a}$	$(\frac{\mu}{\rho})_{\tau,t}$	$(\frac{\mu}{\rho})_{\tau,a}$	$(\frac{\mu}{\rho})_{tot,t}$	$(\frac{\mu}{\rho})_{tot,t-coh}$	$(\frac{\mu}{\rho})_{tot,a}$	$(\frac{\mu}{\rho})_{tot,en}$
.001	.173	.00698	.000337	.0000136	.173	.00696	5.99					4040.	4040.	4050.	4040.	4040.	4040.
.0015	.173	.0116	.000503	.0000337	.172	.0116	5.67					1400.	1400.	1410.	1400.	1400.	1400.
L_{III} .001805	.172	.0144	.000604	.0000504	.172	.0143	5.47					867.	867.	874.	867.	867.	867.
L_{II} .001863	.172	.0149	.000623	.0000540	.171	.0149	5.43					4060.	3900.	4070.	4060.	4060.	3900.
.002	.172	.0162	.000668	.0000629	.171	.0161	5.33					3520.	3380.	3530.	3520.	3520.	3380.
L_I .002065	.172	.0168	.000689	.0000674	.171	.0168	5.28					4860.	4670.	4870.	4860.	4860.	4670.
.003	.171	.0253	.000993	.000147	.171	.0252	4.65					4140.	3980.	4140.	4140.	4140.	3980.
.004	.171	.0337	.00131	.000259	.169	.0334	4.04					3840.	3700.	3850.	3840.	3840.	3700.
.005	.170	.0411	.00163	.000394	.168	.0407	3.53					4350.	4200.	4360.	4350.	4350.	4200.
.006	.169	.0478	.00194	.000547	.168	.0473	3.11					1540.	1510.	1550.	1540.	1540.	1510.
.008	.168	.0590	.00254	.000895	.166	.0581	2.47					696.	683.	700.	696.	696.	683.
.01	.167	.0681	.00313	.00128	.164	.0669	1.99					376.	370.	379.	376.	376.	370.
.015	.164	.0853	.00453	.00236	.159	.0831	1.22					227.	224.	230.	227.	227.	224.
K .015200	.164	.0860	.00457	.00240	.159	.0838	1.20					101.	101.	104.	101.	101.	101.
.02	.161	.0972	.00581	.00351	.155	.0937	.831					54.3	53.9	56.4	54.4	54.3	53.9
.03	.156	.111	.00810	.00576	.148	.105	.467					16.9	16.8	18.2	17.0	16.9	16.8
.04	.151	.118	.0101	.00782	.141	.110	.299					16.3	16.3	17.6	16.4	16.3	16.3
.05	.147	.120	.0118	.00972	.135	.111	.207					125.	62.4	127.	125.	125.	62.4
.06	.142	.121	.0133	.0113	.129	.110	.152					58.8	36.4	59.8	58.9	58.8	36.4
.08	.135	.120	.0158	.0141	.119	.106	.0916					19.1	14.2	19.7	19.2	19.1	14.2
.1	.128	.118	.0178	.0162	.111	.101	.0604					8.60	6.95	9.02	8.74	8.68	6.94
.15	.116	.111	.0210	.0201	.0944	.0909	.0282					4.60	3.90	4.93	4.72	4.62	3.90
.2	.106	.103	.0229	.0223	.0831	.0803	.0162					2.73	2.39	3.01	2.85	2.75	2.40
.3	.0923	.0909	.0249	.0245	.0673	.0664	.00740					1.18	1.06	1.39	1.30	1.19	1.08
.4	.0824	.0817	.0256	.0252	.0570	.0565	.00419					.617	.569	.796	.733	.634	.586
.5	.0754	.0747	.0257	.0254	.0497	.0493	.00272					.185	.175	.323	.295	.206	.195
.6	.0698	.0693	.0256	.0254	.0441	.0440	.00190					.0789	.0761	.198	.182	.101	.0986
.8	.0612	.0610	.0250	.0247	.0362	.0364	.00106					.0240	.0233	.122	.115	.0488	.0478
1.	.0550	.0549	.0242	.0237	.0309	.0312	.000687					.0109	.0107	.0965	.0923	.0365	.0359
1.5	.0447	.0447	.0221	.0216	.0226	.0230	.000309	.000493		.000493	.000153	.00621	.00612	.0838	.0810	.0319	.0316
2.	.0381	.0381	.0202	.0197	.0179	.0185	.000176	.00185		.00185	.000874	.00400	.00395	.0754	.0733	.0297	.0293
3.	.0300	.0300	.0173	.0164	.0127	.0136	.0000789	.00502	.0000105	.00502	.00316	.00204	.00202	.0641	.0631	.0271	.0267
4.	.0251	.0251	.0152	.0142	.00986	.0109	.0000439	.00817	.0000431	.00824	.00576	.00127	.00126	.0569	.0562	.0255	.0249
5.	.0216	.0216	.0136	.0125	.00803	.00916	.0000283	.0109	.0000846	.0109	.00810	.000594	.000591	.0441	.0457	.0232	.0224
6.	.0192	.0192	.0123	.0111	.00681	.00810	.0000198	.0129	.000132	.0130	.0100	.000364	.000363	.0405	.0403	.0224	.0209
8.	.0156	.0156	.0104	.00909	.00521	.00657	.0000115	.0163	.000223	.0166	.0131	.000199	.000198	.0353	.0352	.0225	.0198
10.	.0133	.0133	.00909	.00754	.00422	.00575	.0000074	.0197	.000306	.0199	.0159	.000130	.000130	.0335	.0335	.0236	.0202
15.	.00986	.00986	.00701	.00550	.00286	.00437		.0255	.000479	.0260	.0202	.0000972	.0000972	.0327	.0326	.0246	.0206
20.	.00789	.00789	.00576	.00426	.00216	.00364		.0296	.000609	.0302	.0222	.0000775	.0000775	.0323	.0323	.0254	.0211
30.	.00576	.00576	.00431	.00279	.00146	.00297		.0353	.000796	.0361	.0245	.0000551	.0000550	.0323	.0323	.0271	.0223
40.	.00458	.00458	.00348	.00197	.00110	.00261		.0395	.000937	.0404	.0254	.0000421	.0000421	.0333	.0333	.0291	.0235
50.	.00383	.00383	.00295	.00149	.000881	.00233		.0426	.00104	.0437	.0254	.0000268	.0000268	.0359	.0359	.0330	.0257
60.	.00330	.00330	.00256	.00118	.000740	.00212		.0447	.00113	.0459	.0250	.0000199	.0000199	.0381	.0381	.0360	.0265
80.	.00260	.00260	.00204	.000782	.000555	.00182		.0483	.00125	.0495	.0248	.0000130	.0000130	.0419	.0419	.0404	.0273
100.	.00216	.00216	.00171	.000569	.000445	.00159		.0513	.00134	.0526	.0243	.00000970	.00000970	.0450	.0450	.0440	.0273
												.00000770	.00000770	.0475	.0475	.0466	.0269
														.0492	.0492	.0484	.0262
														.0521	.0521	.0516	.0256
														.0548	.0548	.0543	.0249

38 STRONTIUM
(barns/atom)

E (MeV)	$\sigma^{KN}_{inc,t}$	$\sigma^{BD}_{inc,t}$	$\sigma^{KN}_{inc,a}$	$\sigma^{BD}_{inc,a}$	$\sigma^{KN}_{inc,s}$	$\sigma^{BD}_{inc,s}$	σ_{coh}	$\sigma_{\kappa n}$	$\sigma_{\kappa e}$	$\sigma_{\kappa,t}$	$\sigma_{\kappa,a}$	$\sigma_{\gamma,t}$	$\sigma_{\gamma,a}$	$\sigma_{tot,t}$	$\sigma_{tot,t-coh}$	$\sigma_{tot,a}$	$\sigma_{tot,en}$
.001	25.2	1.21	.0491	.00236	25.1	1.21	890.					651000.	651000.	652000.	651000.	651000.	651000.
.0015	25.1	1.94	.0733	.00566	25.1	1.93	838.					226000.	226000.	227000.	226000.	226000.	226000.
L_{III} .001948	25.1	2.53	.0945	.00953	25.0	2.52	791.					115000.	115000.	116000.	115000.	115000.	115000.
.002	25.1	2.61	.0973	.0101	25.0	2.60	785.					526000.	502000.	527000.	526000.	526000.	502000.
L_{II} .002007	25.1	2.62	.0977	.0102	25.0	2.61	784.					459000.	439000.	460000.	459000.	459000.	439000.
L_{I} .002216	25.1	2.89	.108	.0124	25.0	2.88	763.					454000.	434000.	455000.	454000.	454000.	434000.
.003	25.0	3.87	.145	.0226	24.8	3.85	687.					627000.	599000.	628000.	627000.	627000.	599000.
.004	24.9	5.03	.192	.0387	24.7	4.99	599.					499000.	479000.	500000.	499000.	499000.	479000.
.005	24.8	6.10	.237	.0584	24.6	6.04	524.					567000.	544000.	568000.	567000.	567000.	544000.
.006	24.7	7.04	.283	.0806	24.4	6.96	463.					245000.	238000.	246000.	245000.	245000.	238000.
.008	24.5	8.64	.371	.131	24.1	8.51	368.					110000.	108000.	111000.	110000.	110000.	108000.
.01	24.3	9.94	.456	.186	23.9	9.75	297.					59500.	58400.	60000.	59500.	59500.	58400.
.015	23.9	12.4	.661	.343	23.2	12.1	184.					35900.	35400.	36400.	35900.	35900.	35400.
K .016105	23.8	12.8	.702	.377	23.1	12.4	168.					16100.	15900.	16500.	16100.	16100.	15900.
.02	23.5	14.1	.847	.509	22.6	13.6	125.					8680.	8600.	8990.	8690.	8680.	8600.
.03	22.7	16.1	1.18	.838	21.5	15.3	70.5					2720.	2700.	2920.	2730.	2720.	2700.
.04	22.0	17.0	1.47	1.13	20.5	15.9	45.4					2210.	2200.	2390.	2220.	2210.	2200.
.05	21.3	17.5	1.72	1.41	19.6	16.1	31.4					16700.	8040.	16900.	16700.	16700.	8040.
.06	20.7	17.6	1.95	1.65	18.8	15.9	23.1					9150.	5330.	9290.	9160.	9150.	5330.
.08	19.7	17.5	2.30	2.05	17.4	15.5	13.9					3000.	2160.	3090.	3020.	3000.	2160.
.1	18.7	17.2	2.58	2.37	16.1	14.8	9.17					1350.	1070.	1410.	1370.	1350.	1070.
.15	16.9	16.1	3.06	2.92	13.8	13.2	4.28					725.	604.	774.	742.	727.	605.
.2	15.4	15.0	3.34	3.24	12.1	11.8	2.47					430.	370.	471.	448.	432.	372.
.3	13.4	13.2	3.62	3.56	9.81	9.64	1.12					186.	167.	217.	203.	188.	169.
.4	12.0	11.9	3.73	3.68	8.31	8.22	.635					98.0	89.8	124.	115.	101.	92.2
.5	11.0	10.9	3.75	3.72	7.24	7.18	.412					29.4	27.8	49.8	45.5	32.5	30.7
.6	10.2	10.1	3.74	3.69	6.43	6.41	.287					12.6	12.1	30.1	27.6	15.9	15.3
.8	8.93	8.89	3.65	3.59	5.28	5.30	.162					3.85	3.74	18.2	17.0	7.47	7.30
1.	8.03	8.00	3.53	3.44	4.50	4.56	.104					1.75	1.71	14.3	13.6	5.48	5.39
1.5	6.52	6.51	3.23	3.15	3.29	3.36	.0470	.0745		.0745	.0231	1.00	.983	12.3	11.9	4.75	4.70
2.	5.56	5.55	2.95	2.85	2.61	2.7	.0267	.280		.280	.132	.640	.631	11.0	10.7	4.38	4.32
3.	4.37	4.37	2.52	2.39	1.85	1.98	.0119	.754	.00153	.756	.475	.327	.324	9.38	9.22	3.98	3.91
4.	3.66	3.66	2.22	2.07	1.44	1.59	.00668	1.22	.00629	1.23	.858	.201	.199	8.30	8.20	3.73	3.64
5.	3.16	3.16	1.98	1.81	1.17	1.35	.00431	1.62	.0123	1.63	1.21	.0940	.0935	6.73	6.68	3.40	3.27
6.	2.79	2.79	1.80	1.61	.993	1.18	.00300	1.93	.0192	1.95	1.50	.0590	.0588	5.92	5.89	3.29	3.06
8.	2.28	2.28	1.52	1.32	.760	.962	.00173	2.46	.0325	2.49	1.96	.0322	.0321	5.17	5.16	3.31	2.90
10.	1.94	1.94	1.33	1.09	.615	.846	.00113	2.92	.0446	2.94	2.36	.0210	.0210	4.92	4.91	3.47	2.95
15.	1.44	1.44	1.02	.798	.417	.642		3.81	.0699	3.88	3.01	.0155	.0155	4.81	4.81	3.63	3.04
20.	1.15	1.15	.839	.614	.316	.536		4.40	.0887	4.49	3.28	.0123	.0123	4.76	4.75	3.76	3.12
30.	.841	.841	.628	.404	.212	.437		5.30	.117	5.42	3.66	.00880	.00879	4.78	4.78	4.02	3.29
40.	.668	.668	.508	.287	.160	.381		5.90	.137	6.04	3.77	.00670	.00669	4.91	4.91	4.30	3.46
50.	.558	.558	.429	.217	.128	.341		6.36	.152	6.51	3.76	.00426	.00426	5.32	5.32	4.90	3.81
60.	.480	.480	.373	.169	.108	.311		6.70	.163	6.86	3.73	.00316	.00316	5.64	5.64	5.33	3.90
80.	.379	.379	.298	.114	.0809	.265		7.20	.182	7.38	3.67	.00207	.00207	6.26	6.26	6.05	4.07
100.	.315	.315	.250	.0828	.0649	.232		7.63	.195	7.82	3.58	.00153	.00153	6.71	6.71	6.55	4.06
												.00122	.00122	7.07	7.07	6.94	3.98
												.00101	.00101	7.34	7.34	7.23	3.90
														7.76	7.76	7.68	3.78
														8.13	8.13	8.07	3.66

38 STRONTIUM

(cm^2/g = 0.006873 x barns/atom)

E (MeV)	$(\frac{\mu}{\rho})^{KN}_{inc,t}$	$(\frac{\mu}{\rho})^{BD}_{inc,t}$	$(\frac{\mu}{\rho})^{KN}_{inc,a}$	$(\frac{\mu}{\rho})^{BD}_{inc,a}$	$(\frac{\mu}{\rho})^{KN}_{inc,s}$	$(\frac{\mu}{\rho})^{BD}_{inc,s}$	$(\frac{\mu}{\rho})_{coh}$	$(\frac{\mu}{\rho})_{\kappa n}$	$(\frac{\mu}{\rho})_{\kappa e}$	$(\frac{\mu}{\rho})_{\kappa,t}$	$(\frac{\mu}{\rho})_{\kappa,a}$	$(\frac{\mu}{\rho})_{\tau,t}$	$(\frac{\mu}{\rho})_{\tau,a}$	$(\frac{\mu}{\rho})_{tot,t}$	$(\frac{\mu}{\rho})_{tot,t-coh}$	$(\frac{\mu}{\rho})_{tot,a}$	$(\frac{\mu}{\rho})_{tot,en}$
.001	.173	.00832	.000337	.0000162	.173	.00832	6.12					4470.	4470.	4480.	4470.	4470.	4470.
.0015	.173	.0133	.000504	.0000389	.173	.0133	5.76					1550.	1550.	1560.	1550.	1550.	1550.
L_{III} .001940	.173	.0174	.000649	.0000655	.172	.0173	5.44					790.	790.	797.	790.	790.	790.
.002	.173	.0179	.000669	.0000694	.172	.0179	5.40					3620.	3450.	3620.	3620.	3620.	3450.
L_{II} .002007	.173	.0180	.000671	.0000701	.172	.0179	5.39					3150.	3020.	3160.	3150.	3150.	3020.
L_{I} .002216	.173	.0199	.000742	.0000852	.172	.0198	5.24					3120.	2980.	3130.	3120.	3120.	2980.
.003	.172	.0266	.000997	.000154	.170	.0265	4.72					4310.	4120.	4320.	4310.	4310.	4120.
.004	.171	.0346	.00132	.000266	.170	.0343	4.12					3430.	3290.	3440.	3430.	3430.	3290.
.005	.170	.0419	.00163	.000401	.169	.0415	3.60					3900.	3740.	3900.	3900.	3900.	3740.
.006	.170	.0484	.00195	.000554	.168	.0478	3.18					1680.	1640.	1690.	1680.	1680.	1640.
.008	.168	.0594	.00255	.000900	.166	.0585	2.53					756.	742.	763.	756.	756.	742.
.01	.167	.0683	.00313	.00128	.164	.0670	2.04					409.	401.	412.	409.	409.	401.
.015	.164	.0852	.00454	.00236	.159	.0832	1.26					247.	243.	250.	247.	247.	243.
K .016105	.164	.0880	.00482	.00259	.159	.0852	1.15					111.	109.	113.	111.	111.	109.
.02	.162	.0969	.00582	.00350	.155	.0935	.859					59.7	59.1	61.8	59.7	59.7	59.1
.03	.156	.111	.00811	.00576	.148	.105	.485					18.7	18.4	20.1	18.8	18.7	18.6
.04	.151	.117	.0101	.00777	.141	.109	.312					15.2	15.1	16.4	15.3	15.2	15.1
.05	.146	.120	.0118	.00969	.135	.111	.216					115.	55.3	116.	115.	115.	55.3
.06	.142	.121	.0134	.0113	.129	.109	.159					62.9	36.6	63.9	63.0	62.9	36.6
.08	.135	.120	.0158	.0141	.120	.107	.0955					20.6	14.8	21.2	20.8	20.6	14.8
.1	.129	.118	.0177	.0163	.111	.102	.0630					9.28	7.35	9.69	9.42	9.28	7.35
.15	.116	.111	.0210	.0201	.0948	.0907	.0294					4.98	4.15	5.32	5.10	5.00	4.16
.2	.106	.103	.0230	.0223	.0832	.0811	.0170					2.96	2.54	3.24	3.08	2.97	2.56
.3	.0921	.0907	.0249	.0245	.0674	.0663	.00770					1.28	1.15	1.49	1.46	1.29	1.16
.4	.0825	.0818	.0256	.0253	.0571	.0565	.00436					.674	.617	.852	.790	.694	.634
.5	.0756	.0749	.0258	.0256	.0498	.0493	.00283					.202	.191	.342	.313	.223	.211
.6	.0701	.0694	.0257	.0254	.0442	.0441	.00197					.0866	.0832	.207	.190	.109	.105
.8	.0614	.0611	.0251	.0247	.0363	.0364	.00111					.0265	.0257	.125	.117	.0513	.0502
1.	.0552	.0550	.0243	.0236	.0309	.0313	.000715					.0120	.0118	.0983	.0935	.0377	.0370
1.5	.0448	.0447	.0222	.0216	.0226	.0231	.000323	.000512		.000512	.000159	.00687	.00676	.0845	.0818	.0326	.0323
2.	.0382	.0381	.0203	.0196	.0179	.0186	.000184	.00192		.00192	.000907	.00440	.00434	.0756	.0735	.0301	.0297
3.	.0300	.0300	.0173	.0164	.0127	.0136	.0000818	.00518	.0000105	.00520	.00326	.00225	.00223	.0649	.0634	.0274	.0269
4.	.0252	.0252	.0153	.0142	.00990	.0109	.0000459	.00839	.0000432	.00845	.00590	.00138	.00137	.0570	.0564	.0256	.0252
5.	.0217	.0217	.0136	.0124	.00804	.00928	.0000296	.0111	.0000845	.0112	.00832	.000646	.000643	.0463	.0459	.0234	.0231
6.	.0192	.0192	.0124	.0111	.00682	.00811	.0000206	.0133	.0000132	.0134	.0103	.000406	.000404	.0407	.0405	.0226	.0223
8.	.0157	.0157	.0104	.00907	.00522	.00661	.0000119	.0169	.0000223	.0171	.0135	.000221	.000221	.0355	.0355	.0227	.0224
10.	.0133	.0133	.00914	.00749	.00423	.00581	.0000078	.0201	.0000307	.0203	.0162	.000144	.000144	.0338	.0337	.0238	.0235
15.	.00990	.00990	.00701	.00548	.00287	.00441		.0262	.0000480	.0267	.0207	.000107	.000107	.0331	.0331	.0249	.0247
20.	.00790	.00790	.00577	.00422	.00217	.00368		.0302	.0000610	.0309	.0225	.0000845	.0000845	.0327	.0326	.0258	.0256
30.	.00578	.00578	.00432	.00278	.00146	.00300		.0364	.0000804	.0373	.0252	.0000605	.0000604	.0329	.0329	.0276	.0274
40.	.00459	.00459	.00349	.00197	.00110	.00262		.0406	.0000942	.0415	.0259	.0000460	.0000460	.0337	.0337	.0296	.0294
50.	.00384	.00384	.00295	.00149	.000880	.00234		.0437	.00104	.0447	.0258	.0000293	.0000293	.0366	.0366	.0337	.0335
60.	.00330	.00330	.00256	.00116	.000742	.00214		.0460	.00112	.0471	.0256	.0000217	.0000217	.0388	.0388	.0366	.0364
80.	.00260	.00260	.00205	.000784	.000556	.00182		.0495	.00125	.0507	.0252	.0000142	.0000142	.0430	.0430	.0416	.0414
100.	.00216	.00216	.00172	.000569	.000446	.00159		.0524	.00134	.0537	.0246	.0000105	.0000105	.0461	.0461	.0458	.0456
												.00000840	.00000840	.0486	.0486	.0477	.0475
												.00000690	.00000690	.0504	.0504	.0497	.0495
														.0533	.0533	.0528	.0526
														.0559	.0559	.0555	.0552

39 YTTRIUM
(barns/atom)

E (MeV)	$\sigma^{KN}_{inc,t}$	$\sigma^{BD}_{inc,t}$	$\sigma^{KN}_{inc,a}$	$\sigma^{BD}_{inc,a}$	$\sigma^{KN}_{inc,s}$	$\sigma^{BD}_{inc,s}$	σ_{coh}	σ_{π_n}	σ_{π_e}	$\sigma_{\pi,t}$	$\sigma_{\pi,a}$	$\sigma_{\gamma,t}$	$\sigma_{\gamma,a}$	$\sigma_{tot,t}$	$\sigma_{tot,t-coh}$	$\sigma_{tot,a}$	$\sigma_{tot,en}$
.001	25.8	1.24	.0503	.00242	25.8	1.24	939.					739000.	739000.	740000.	739000.	739000.	739000.
.0015	25.8	1.99	.0752	.00580	25.7	1.98	884.					252000.	252000.	253000.	252000.	252000.	252000.
.002	25.7	2.69	.0999	.0104	25.6	2.68	827.					119000.	119000.	120000.	119000.	119000.	119000.
L_{III} .002079	25.7	2.80	.104	.0113	25.6	2.79	818.					108000.	108000.	109000.	108000.	108000.	108000.
L_{II} .002155	25.7	2.90	.107	.0121	25.6	2.89	810.					482000.	458000.	483000.	482000.	482000.	458000.
L_{I} .002373	25.7	3.20	.118	.0147	25.6	3.19	786.					415000.	395000.	416000.	415000.	415000.	395000.
.003	25.6	3.99	.149	.0231	25.5	3.97	721.					573000.	545000.	574000.	573000.	573000.	545000.
.004	25.5	5.17	.197	.0398	25.3	5.13	628.					458000.	438000.	459000.	458000.	458000.	438000.
.005	25.4	6.23	.244	.0597	25.2	6.17	550.					521000.	498000.	522000.	521000.	521000.	498000.
.006	25.3	7.19	.290	.0823	25.1	7.11	485.					271000.	261000.	272000.	271000.	271000.	261000.
.008	25.2	8.83	.381	.134	24.8	8.70	386.					122000.	119000.	123000.	122000.	122000.	119000.
.01	25.0	10.2	.468	.191	24.5	10.0	313.					66300.	64900.	66900.	66300.	66300.	64900.
.015	24.5	12.7	.678	.351	23.9	12.3	196.					40000.	39300.	40500.	40000.	40000.	39300.
K .017038	24.3	13.4	.757	.416	23.6	13.0	166.					18000.	17800.	18400.	18000.	18000.	17800.
.02	24.1	14.4	.869	.520	23.2	13.9	133.					9630.	9530.	9950.	9640.	9630.	9530.
.03	23.3	16.4	1.21	.853	22.1	15.5	75.0					3060.	3040.	3270.	3070.	3060.	3040.
.04	22.6	17.4	1.51	1.16	21.1	16.2	48.3					2110.	2100.	2290.	2120.	2110.	2100.
.05	21.9	17.9	1.77	1.44	20.1	16.5	33.5					15700.	7330.	15900.	15700.	15700.	7330.
.06	21.3	18.1	2.00	1.70	19.3	16.4	24.6					10100.	5510.	10200.	10100.	10100.	5510.
.08	20.2	17.9	2.36	2.10	17.8	15.8	14.8					3320.	2310.	3410.	3340.	3320.	2310.
.1	19.2	17.6	2.65	2.43	16.6	15.2	9.79					1500.	1160.	1570.	1520.	1500.	1160.
.15	17.3	16.5	3.14	2.99	14.2	13.5	4.57					800.	655.	851.	818.	802.	656.
.2	15.8	15.3	3.43	3.31	12.4	12.0	2.63					477.	405.	520.	495.	479.	407.
.3	13.8	13.5	3.72	3.64	10.1	9.86	1.20					208.	184.	241.	226.	210.	186.
.4	12.3	12.2	3.83	3.77	8.53	8.43	.679					109.	99.1	136.	127.	112.	102.
.5	11.3	11.2	3.85	3.81	7.43	7.39	.440					33.0	31.0	54.1	49.5	36.1	34.0
.6	10.4	10.4	3.83	3.80	6.60	6.60	.307					14.1	13.5	32.0	29.4	17.5	16.8
.8	9.16	9.12	3.75	3.68	5.42	5.44	.173					4.32	4.19	19.0	17.8	8.04	7.83
1.	8.24	8.21	3.62	3.53	4.61	4.68	.112					1.99	1.94	14.9	14.2	5.82	5.71
1.5	6.69	6.68	3.31	3.23	3.38	3.45	.0502	.0791		.0791	.0244	1.13	1.11	12.8	12.3	4.98	4.92
2.	5.71	5.70	3.03	2.92	2.68	2.78	.0286	.296		.296	.139	.720	.709	11.4	11.1	4.55	4.51
3.	4.49	4.49	2.59	2.45	1.90	2.04	.0127	.799	.00157	.801	.504	.367	.363	9.66	9.49	4.12	4.04
4.	3.75	3.75	2.28	2.12	1.47	1.63	.00713	1.29	.00645	1.30	.906	.228	.226	8.55	8.44	3.85	3.76
5.	3.24	3.24	2.03	1.86	1.21	1.38	.00461	1.70	.0127	1.71	1.27	.105	.104	6.91	6.86	3.49	3.36
6.	2.86	2.86	1.84	1.64	1.02	1.22	.00319	2.04	.0197	2.06	1.58	.0660	.0657	6.09	6.06	3.39	3.12
8.	2.34	2.34	1.56	1.35	.780	.992	.00184	2.60	.0333	2.63	2.06	.0358	.0357	5.34	5.33	3.43	2.99
10.	1.99	1.99	1.36	1.12	.631	.874	.00121	3.09	.0458	3.14	2.49	.0237	.0236	5.08	5.07	3.60	3.05
15.	1.48	1.48	1.05	.815	.428	.665		4.00	.0718	4.07	3.14	.0175	.0175	4.97	4.97	3.76	3.15
20.	1.19	1.19	.861	.632	.324	.558		4.65	.0910	4.74	3.46	.0138	.0138	4.94	4.93	3.91	3.23
30.	.863	.863	.645	.413	.218	.450		5.59	.120	5.71	3.84	.00990	.00989	4.98	4.98	4.20	3.42
40.	.686	.686	.521	.292	.165	.394		6.20	.140	6.34	3.92	.00750	.00749	5.14	5.14	4.51	3.82
50.	.573	.573	.441	.221	.132	.352		6.70	.155	6.85	3.92	.00478	.00478	5.55	5.55	5.12	3.96
60.	.493	.493	.383	.173	.110	.320		7.02	.168	7.19	3.87	.00352	.00352	5.93	5.93	5.60	4.10
80.	.389	.389	.306	.116	.0830	.273		7.60	.187	7.79	3.84	.00232	.00232	6.58	6.58	6.36	4.26
100.	.323	.323	.256	.0846	.0666	.238		8.01	.200	8.21	3.73	.00171	.00171	7.03	7.03	6.84	4.21
												.00136	.00136	7.42	7.42	7.29	4.14
												.00113	.00113	7.68	7.68	7.57	4.04
														8.18	8.18	8.10	3.96
														8.53	8.53	8.47	3.81

39 YTTRIUM
(cm^2/g = 0.006774 x barns/atom)

E (MeV)	$(\frac{\mu}{\rho})^{KN}_{inc,t}$	$(\frac{\mu}{\rho})^{BD}_{inc,t}$	$(\frac{\mu}{\rho})^{KN}_{inc,a}$	$(\frac{\mu}{\rho})^{BD}_{inc,a}$	$(\frac{\mu}{\rho})^{KN}_{inc,s}$	$(\frac{\mu}{\rho})^{BD}_{inc,s}$	$(\frac{\mu}{\rho})_{coh}$	$(\frac{\mu}{\rho})_{\kappa n}$	$(\frac{\mu}{\rho})_{\kappa e}$	$(\frac{\mu}{\rho})_{\kappa,t}$	$(\frac{\mu}{\rho})_{\kappa,a}$	$(\frac{\mu}{\rho})_{\tau,t}$	$(\frac{\mu}{\rho})_{\tau,a}$	$(\frac{\mu}{\rho})_{tot,t}$	$(\frac{\mu}{\rho})_{tot,t-coh}$	$(\frac{\mu}{\rho})_{tot,a}$	$(\frac{\mu}{\rho})_{tot,en}$
.001	.175	.0084	.000341	.0000164	.175	.0084	6.36					5010.	5010.	5010.	5010.	5010.	5010.
.0015	.175	.0135	.000509	.0000393	.174	.0134	5.99					1710.	1710.	1710.	1710.	1710.	1710.
.002	.174	.0182	.000677	.0000704	.173	.0182	5.60					806.	806.	813.	806.	806.	806.
L_{III} .002079	.174	.0190	.000704	.0000765	.173	.0189	5.54					732.	732.	738.	732.	732.	732.
												3270.	3100.	3270.	3270.	3270.	3100.
L_{II} .002155	.174	.0196	.000725	.0000820	.173	.0196	5.49					2810.	2680.	2820.	2810.	2810.	2680.
												3880.	3690.	3890.	3880.	3880.	3690.
L_{I} .002373	.174	.0217	.000799	.0000996	.173	.0216	5.32					3100.	2970.	3110.	3100.	3100.	2970.
												3530.	3370.	3540.	3530.	3530.	3370.
.003	.173	.0270	.00101	.000156	.173	.0269	4.88					1840.	1770.	1840.	1840.	1840.	1770.
.004	.173	.0350	.00133	.000270	.171	.0348	4.25					826.	806.	833.	826.	826.	806.
.005	.172	.0422	.00165	.000404	.171	.0418	3.73					449.	440.	453.	449.	449.	440.
.006	.171	.0487	.00196	.000558	.170	.0482	3.29					271.	266.	274.	271.	271.	266.
.008	.171	.0598	.00258	.000908	.168	.0589	2.61					122.	121.	125.	122.	122.	121.
.01	.169	.0691	.00317	.00129	.166	.0677	2.12					65.2	64.6	67.4	65.3	65.2	64.6
.015	.166	.0846	.00459	.00238	.162	.0833	1.33					20.7	20.6	22.2	20.8	20.7	20.6
K .017038	.165	.0908	.00513	.00282	.160	.0881	1.12					14.3	14.2	15.5	14.4	14.3	14.2
												106.	49.7	108.	106.	106.	49.7
.02	.163	.0975	.00589	.00352	.157	.0942	.901					66.4	37.3	69.1	68.4	68.4	37.3
.03	.158	.111	.00820	.00578	.150	.105	.508					22.5	15.6	23.1	22.6	22.5	15.6
.04	.153	.118	.0102	.00786	.143	.110	.327					10.2	7.86	10.6	10.3	10.2	7.86
.05	.148	.121	.0120	.00975	.136	.112	.227					5.42	4.44	5.76	5.54	5.43	4.44
.06	.144	.123	.0135	.0115	.131	.111	.167					3.23	2.74	3.52	3.35	3.24	2.76
.08	.137	.121	.0160	.0142	.121	.107	.100					1.41	1.25	1.63	1.53	1.42	1.26
.1	.130	.119	.0180	.0165	.112	.103	.0643					.738	.671	.921	.860	.799	.691
.15	.117	.112	.0213	.0203	.0962	.0914	.0310					.224	.210	.366	.335	.245	.230
.2	.107	.104	.0232	.0224	.0840	.0813	.0178					.0955	.0914	.217	.199	.119	.114
.3	.0935	.0914	.0252	.0247	.0684	.0668	.00813					.0293	.0284	.129	.121	.0565	.0530
.4	.0833	.0826	.0259	.0255	.0578	.0571	.00460					.0135	.0131	.101	.0962	.0394	.0387
.5	.0765	.0759	.0261	.0258	.0503	.0501	.00298					.00765	.00752	.0867	.0833	.0337	.0333
.6	.0704	.0704	.0259	.0257	.0447	.0447	.00208					.00488	.00488	.0772	.0752	.0368	.0360
.8	.0620	.0618	.0254	.0249	.0367	.0369	.00117					.00249	.00246	.0654	.0643	.0279	.0274
1.	.0558	.0556	.0245	.0239	.0312	.0317	.000759					.00154	.00153	.0579	.0572	.0241	.0235
1.5	.0453	.0453	.0224	.0219	.0229	.0234	.000340	.000536		.000536	.000165	.000711	.000704	.0468	.0465	.0236	.0230
2.	.0387	.0386	.0205	.0198	.0182	.0188	.000194	.00201		.00201	.000942	.000447	.000445	.0413	.0411	.0230	.0211
3.	.0304	.0304	.0175	.0164	.0129	.0138	.0000860	.00541	.0000104	.00543	.00341	.000243	.000242	.0302	.0301	.0232	.0203
4.	.0254	.0254	.0154	.0144	.00996	.0110	.0000483	.00874	.0000437	.00881	.00614	.000161	.000160	.0344	.0343	.0244	.0207
5.	.0219	.0219	.0138	.0126	.00820	.00935	.0000312	.0115	.0000860	.0116	.00860	.000119	.000119	.0337	.0337	.0255	.0213
6.	.0194	.0194	.0125	.0111	.00691	.00826	.0000216	.0138	.000133	.0140	.0107	.0000935	.0000935	.0335	.0334	.0265	.0219
8.	.0159	.0159	.0106	.00914	.00528	.00672	.0000125	.0176	.000226	.0178	.0140	.0000671	.0000670	.0337	.0337	.0283	.0232
10.	.0135	.0135	.00921	.00759	.00427	.00592	.0000082	.0209	.000310	.0211	.0169	.0000508	.0000507	.0348	.0348	.0296	.0245
15.	.0100	.0100	.00711	.00552	.00290	.00450		.0271	.000486	.0276	.0213	.0000324	.0000324	.0376	.0376	.0347	.0288
20.	.00806	.00806	.00583	.00428	.00219	.00378		.0315	.000616	.0321	.0234	.0000238	.0000238	.0402	.0402	.0379	.0278
30.	.00585	.00585	.00437	.00280	.00148	.00305		.0379	.000813	.0387	.0260	.0000157	.0000157	.0446	.0446	.0431	.0289
40.	.00465	.00465	.00353	.00198	.00112	.00267		.0428	.000948	.0429	.0266	.0000116	.0000116	.0476	.0476	.0465	.0295
50.	.00388	.00388	.00299	.00150	.000894	.00238		.0454	.00105	.0464	.0266	.00000920	.00000920	.0503	.0503	.0494	.0280
60.	.00334	.00334	.00259	.00117	.000745	.00217		.0476	.00114	.0487	.0262	.00000760	.00000760	.0520	.0520	.0513	.0274
80.	.00264	.00264	.00207	.000786	.000562	.00185		.0515	.00127	.0528	.0260			.0554	.0554	.0549	.0268
100.	.00219	.00219	.00173	.000573	.000451	.00161		.0543	.00135	.0556	.0263			.0578	.0578	.0574	.0258

40 ZIRCONIUM
(barns/atom)

E (MeV)	$\sigma^{KN}_{inc,t}$	$\sigma^{BD}_{inc,t}$	$\sigma^{KN}_{inc,a}$	$\sigma^{BD}_{inc,a}$	$\sigma^{KN}_{inc,s}$	$\sigma^{BD}_{inc,s}$	σ_{coh}	σ_{κ_n}	σ_{κ_e}	$\sigma_{\kappa,t}$	$\sigma_{\kappa,a}$	$\sigma_{\gamma,t}$	$\sigma_{\gamma,a}$	$\sigma_{tot,t}$	$\sigma_{tot,t-coh}$	$\sigma_{tot,a}$	$\sigma_{tot,en}$
.001	26.5	1.08	.0516	.00210	26.5	1.08	991.					829000.	829000.	830000.	829000.	829000.	829000.
.0015	26.5	1.81	.0772	.00528	26.4	1.80	933.					285000.	285000.	286000.	285000.	285000.	285000.
.002	26.4	2.54	.102	.00986	26.3	2.53	872.					133000.	133000.	134000.	133000.	133000.	133000.
L_{III} .002223	26.4	2.85	.114	.0123	26.3	2.84	846.					101000.	101000.	102000.	101000.	101000.	101000.
L_{II} .002307	26.4	2.97	.118	.0133	26.3	2.96	836.					444000.	420000.	445000.	444000.	444000.	420000.
L_{I} .002533	26.3	3.29	.129	.0161	26.2	3.27	810.					381000.	361000.	382000.	381000.	381000.	361000.
.003	26.3	3.90	.152	.0226	26.1	3.88	758.					526000.	498000.	527000.	526000.	526000.	498000.
.004	26.2	5.12	.202	.0394	26.0	5.08	660.					423000.	403000.	424000.	423000.	423000.	403000.
.005	26.1	6.22	.250	.0596	25.8	6.16	577.					481000.	458000.	482000.	481000.	481000.	458000.
.006	26.0	7.23	.298	.0828	25.7	7.15	509.					302000.	290000.	303000.	302000.	302000.	290000.
.008	25.8	8.96	.391	.136	25.4	8.82	405.					136000.	132000.	137000.	136000.	136000.	132000.
.01	25.6	10.4	.480	.195	25.1	10.2	330.					73600.	71800.	74200.	73600.	73600.	71800.
.015	25.2	12.9	.696	.357	24.5	12.5	208.					44300.	43400.	44800.	44300.	44300.	43400.
K .017998	24.9	14.0	.814	.458	24.1	13.8	163.					20000.	19700.	20400.	20000.	20000.	19700.
.02	24.7	14.7	.892	.531	23.8	14.2	141.					10700.	10600.	11000.	10700.	10700.	10600.
.03	23.9	16.7	1.24	.869	22.7	15.8	79.6					3390.	3360.	3610.	3400.	3390.	3360.
.04	23.1	17.8	1.54	1.19	21.6	16.6	51.4					2010.	2000.	2190.	2020.	2010.	2000.
.05	22.5	18.3	1.81	1.48	20.6	16.8	35.7					14800.	6730.	15000.	14800.	14800.	6730.
.06	21.8	18.5	2.05	1.74	19.8	16.8	26.2					11000.	5600.	11200.	11000.	11000.	5600.
.08	20.7	18.3	2.42	2.14	18.3	16.2	15.8					3620.	2440.	3720.	3640.	3620.	2440.
.1	19.7	18.0	2.72	2.48	17.0	15.5	10.4					1630.	1230.	1700.	1650.	1630.	1230.
.15	17.7	16.9	3.22	3.07	14.5	13.8	4.88					880.	707.	934.	898.	882.	708.
.2	16.3	15.7	3.51	3.39	12.7	12.3	2.81					525.	439.	570.	543.	527.	441.
.3	14.1	13.9	3.81	3.75	10.3	10.2	1.28					230.	202.	264.	248.	232.	204.
.4	12.7	12.5	3.92	3.86	8.74	8.64	.724					120.	108.	148.	138.	123.	110.
.5	11.6	11.5	3.94	3.91	7.62	7.59	.469					36.6	34.2	58.4	53.5	39.8	37.3
.6	10.7	10.6	3.93	3.87	6.77	6.73	.328					15.8	15.0	34.3	31.5	19.3	18.4
.8	9.4	9.36	3.84	3.77	5.56	5.59	.185					4.85	4.69	20.0	18.7	8.66	8.44
1.	8.45	8.42	3.72	3.62	4.73	4.80	.119					2.23	2.18	15.5	14.7	6.15	6.04
1.5	6.86	6.85	3.40	3.32	3.47	3.53	.0537	.0840		.0840	.0260	1.27	1.25	13.2	12.8	5.21	5.16
2.	5.85	5.85	3.11	3.00	2.75	2.85	.0304	.313		.313	.147	.810	.797	11.7	11.4	4.74	4.67
3.	4.60	4.60	2.66	2.51	1.95	2.09	.0135	.842	.00161	.844	.530	.410	.405	9.95	9.77	4.25	4.17
4.	3.85	3.85	2.34	2.17	1.51	1.68	.00761	1.36	.00661	1.37	.954	.253	.251	8.79	8.67	3.97	3.87
5.	3.32	3.32	2.09	1.90	1.24	1.42	.00491	1.80	.0130	1.81	1.34	.118	.117	7.11	7.05	3.60	3.46
6.	2.94	2.94	1.89	1.68	1.05	1.26	.00339	2.15	.0202	2.17	1.66	.0745	.0741	6.27	6.24	3.50	3.22
8.	2.40	2.40	1.60	1.38	.800	1.02	.00194	2.72	.0341	2.75	2.15	.0402	.0401	5.50	5.48	3.54	3.08
10.	2.05	2.05	1.40	1.15	.648	.904	.00128	3.22	.0470	3.27	2.59	.0263	.0262	5.25	5.25	3.74	3.15
15.	1.51	1.51	1.08	.829	.439	.681		4.20	.0735	4.27	3.29	.0195	.0195	5.15	5.15	3.92	3.26
20.	1.22	1.22	.883	.644	.332	.576		4.90	.0933	4.99	3.63	.0155	.0155	5.13	5.13	4.08	3.36
30.	.885	.885	.661	.419	.224	.466		5.86	.122	5.98	4.00	.0110	.0110	5.16	5.16	4.36	3.54
40.	.703	.703	.534	.296	.169	.407		6.50	.143	6.64	4.09	.00842	.00841	5.33	5.33	4.68	3.75
50.	.587	.587	.452	.225	.135	.362		7.01	.159	7.17	4.07	.00534	.00534	5.79	5.79	5.36	4.12
60.	.506	.506	.392	.176	.113	.330		7.40	.172	7.57	4.05	.00392	.00392	6.21	6.21	5.88	4.28
80.	.399	.399	.314	.119	.0852	.280		7.94	.191	8.13	3.98	.00258	.00258	6.87	6.87	6.64	4.42
100.	.331	.331	.263	.0861	.0683	.245		8.42	.205	8.63	3.88	.00191	.00191	7.34	7.34	7.18	4.39
												.00152	.00152	7.76	7.76	7.62	4.30
												.00126	.00126	8.08	8.08	7.96	4.23
														8.53	8.53	8.44	4.10
														8.96	8.96	8.89	3.97

40 ZIRCONIUM
(cm²/g = 0.006602 x barns/atom)

E (MeV)	$(\frac{\mu}{\rho})^{KN}_{inc,t}$	$(\frac{\mu}{\rho})^{BD}_{inc,t}$	$(\frac{\mu}{\rho})^{KN}_{inc,a}$	$(\frac{\mu}{\rho})^{BD}_{inc,a}$	$(\frac{\mu}{\rho})^{KN}_{inc,s}$	$(\frac{\mu}{\rho})^{BD}_{inc,s}$	$(\frac{\mu}{\rho})_{coh}$	$(\frac{\mu}{\rho})_{\kappa n}$	$(\frac{\mu}{\rho})_{\kappa e}$	$(\frac{\mu}{\rho})_{\kappa,t}$	$(\frac{\mu}{\rho})_{\kappa,a}$	$(\frac{\mu}{\rho})_{\tau,t}$	$(\frac{\mu}{\rho})_{\tau,a}$	$(\frac{\mu}{\rho})_{tot,t}$	$(\frac{\mu}{\rho})_{tot,t-coh}$	$(\frac{\mu}{\rho})_{tot,a}$	$(\frac{\mu}{\rho})_{tot,en}$
.001	.175	.00713	.000341	.0000139	.175	.00713	6.54					5470.	5470.	5480.	5470.	5470.	5470.
.0015	.175	.0119	.000510	.0000349	.174	.0119	6.16					1880.	1880.	1890.	1880.	1880.	1880.
.002	.174	.0168	.000673	.0000651	.174	.0167	5.76					878.	878.	885.	878.	878.	878.
L_{III} .002223	.174	.0188	.000753	.0000812	.174	.0187	5.59					667.	667.	673.	667.	667.	667.
												2930.	2770.	2940.	2930.	2930.	2770.
L_{II} .002307	.174	.0196	.000779	.0000878	.174	.0195	5.52					2520.	2380.	2520.	2520.	2520.	2380.
												3470.	3290.	3480.	3470.	3470.	3290.
L_{I} .002533	.174	.0217	.000852	.000106	.173	.0216	5.35					2790.	2660.	2800.	2790.	2790.	2660.
												3180.	3020.	3180.	3180.	3180.	3020.
.003	.174	.0257	.00100	.000149	.172	.0256	5.00					1990.	1910.	2000.	1990.	1990.	1910.
.004	.173	.0338	.00133	.000260	.172	.0335	4.36					898.	871.	904.	898.	898.	871.
.005	.172	.0411	.00165	.000393	.170	.0407	3.81					486.	474.	490.	486.	486.	474.
.006	.172	.0477	.00197	.000547	.170	.0472	3.36					292.	287.	296.	292.	292.	287.
.008	.170	.0592	.00258	.000898	.168	.0582	2.67					132.	130.	135.	132.	132.	130.
.01	.169	.0687	.00317	.00129	.166	.0673	2.18					70.6	70.0	72.4	70.6	70.4	70.0
.015	.166	.0852	.00459	.00236	.162	.0825	1.37					22.4	22.2	23.8	22.4	22.4	22.2
K .017998	.164	.0924	.00537	.00302	.159	.0891	1.08					13.3	13.2	14.5	13.3	13.3	13.2
												97.7	44.4	99.0	97.7	97.7	44.4
.02	.163	.0970	.00589	.00351	.157	.0937	.931					72.6	37.0	73.9	72.6	72.6	37.0
.03	.158	.110	.00819	.00574	.150	.104	.526					23.9	16.1	24.6	24.0	23.9	16.1
.04	.153	.118	.0102	.00786	.143	.110	.339					10.8	8.12	11.2	10.9	10.8	8.12
.05	.149	.121	.0119	.00977	.136	.111	.236					5.81	4.67	6.17	5.93	5.82	4.67
.06	.144	.122	.0135	.0115	.131	.111	.173					3.47	2.90	3.76	3.58	3.48	2.91
.08	.137	.121	.0160	.0141	.121	.107	.104					1.52	1.33	1.74	1.64	1.53	1.35
.1	.130	.119	.0180	.0164	.112	.102	.0687					.792	.713	.977	.911	.812	.726
.15	.117	.112	.0213	.0203	.0957	.0911	.0322					.242	.226	.386	.353	.263	.240
.2	.108	.104	.0232	.0224	.0838	.0812	.0186					.104	.0990	.226	.208	.127	.121
.3	.0931	.0918	.0252	.0248	.0680	.0673	.00845					.0320	.0310	.132	.123	.0572	.0557
.4	.0838	.0825	.0259	.0255	.0577	.0570	.00478					.0147	.0144	.102	.0970	.0406	.0390
.5	.0766	.0759	.0260	.0258	.0503	.0501	.00310					.00838	.00825	.0871	.0845	.0344	.0341
.6	.0706	.0700	.0259	.0255	.0447	.0444	.00217					.00535	.00526	.0772	.0753	.0313	.0308
.8	.0621	.0618	.0254	.0249	.0367	.0369	.00122					.00271	.00267	.0657	.0645	.0281	.0275
1.	.0558	.0556	.0246	.0239	.0312	.0317	.000786					.00167	.00166	.0580	.0572	.0262	.0255
1.5	.0483	.0452	.0224	.0219	.0229	.0233	.000355	.000555		.000555	.000172	.000779	.000772	.0469	.0465	.0238	.0228
2.	.0386	.0386	.0205	.0198	.0182	.0188	.000201	.00207		.00207	.000970	.000492	.000489	.0414	.0412	.0231	.0213
3.	.0304	.0304	.0176	.0166	.0129	.0138	.0000891	.00556	.0000106	.00957	.00350	.000265	.000265	.0363	.0362	.0234	.0203
4.	.0254	.0254	.0154	.0143	.00997	.0111	.0000502	.00898	.0000436	.00964	.00630	.000174	.000173	.0347	.0347	.0247	.0208
5.	.0219	.0219	.0138	.0125	.00819	.00937	.0000324	.0119	.0000858	.0119	.00885	.000129	.000129	.0340	.0340	.0259	.0215
6.	.0194	.0194	.0125	.0111	.00693	.00832	.0000224	.0142	.000133	.0143	.0110	.000102	.000102	.0339	.0339	.0269	.0222
8.	.0158	.0158	.0106	.00911	.00528	.00673	.0000128	.0180	.000225	.0182	.0142	.0000726	.0000726	.0341	.0341	.0288	.0234
10.	.0135	.0135	.00924	.00759	.00428	.00597	.0000085	.0213	.000310	.0216	.0171	.0000556	.0000555	.0352	.0352	.0309	.0248
15.	.00997	.00997	.00713	.00547	.00290	.00450		.0277	.000485	.0282	.0217	.0000353	.0000353	.0382	.0382	.0354	.0272
20.	.00805	.00805	.00583	.00425	.00219	.00380		.0323	.000616	.0329	.0240	.0000259	.0000259	.0410	.0410	.0388	.0283
30.	.00584	.00584	.00436	.00277	.00148	.00308		.0387	.000805	.0395	.0264	.0000170	.0000170	.0454	.0454	.0438	.0292
40.	.00464	.00464	.00353	.00195	.00112	.00269		.0429	.000944	.0438	.0270	.0000126	.0000126	.0485	.0485	.0474	.0290
50.	.00388	.00388	.00298	.00149	.000891	.00239		.0463	.00105	.0473	.0269	.0000100	.0000100	.0512	.0512	.0503	.0284
60.	.00334	.00334	.00259	.00116	.000746	.00218		.0489	.00114	.0500	.0267	.00000830	.00000830	.0533	.0533	.0526	.0279
80.	.00263	.00263	.00207	.000786	.000562	.00185		.0524	.00126	.0537	.0263			.0563	.0563	.0557	.0271
100.	.00219	.00219	.00174	.000568	.000451	.00162		.0556	.00135	.0570	.0256			.0592	.0592	.0587	.0262

41 NIOBIUM
(barns/atom)

E (MeV)	KN $\sigma_{inc,t}$	BD $\sigma_{inc,t}$	KN $\sigma_{inc,a}$	BD $\sigma_{inc,a}$	KN $\sigma_{inc,s}$	BD $\sigma_{inc,s}$	σ_{coh}	σ_{x_n}	σ_{x_e}	$\sigma_{x,t}$	$\sigma_{x,a}$	$\sigma_{\gamma,t}$	$\sigma_{\gamma,a}$	$\sigma_{tot,t}$	$\sigma_{tot,t-coh}$	$\sigma_{tot,a}$	$\sigma_{tot,en}$
.001	27.2	.966	.0529	.00188	27.1	.964	1050.					929000.	929000.	930000.	929000.	929000.	929000.
.0015	27.1	1.70	.0791	.00496	27.0	1.70	992.					318000.	318000.	319000.	318000.	318000.	318000.
.002	27.1	2.43	.105	.00943	27.0	2.42	930.					149000.	149000.	150000.	149000.	149000.	149000.
L_{III} .002370	27.0	2.95	.124	.0135	26.9	2.94	883.					95400.	95600.	96500.	95600.	95600.	95600.
												410000.	386000.	411000.	410000.	410000.	386000.
L_{II} .002464	27.0	3.09	.129	.0147	26.9	3.08	872.					351000.	331000.	352000.	351000.	351000.	331000.
												484000.	456000.	485000.	484000.	484000.	456000.
L_{I} .002698	27.0	3.41	.141	.0178	26.8	3.39	843.					392000.	371000.	393000.	392000.	392000.	371000.
												446000.	422000.	447000.	446000.	446000.	422000.
.003	27.0	3.82	.156	.0221	26.8	3.80	807.					332000.	316000.	333000.	332000.	332000.	316000.
.004	26.9	5.10	.207	.0392	26.6	5.06	699.					149000.	144000.	150000.	149000.	149000.	144000.
.005	26.8	6.27	.256	.0601	26.5	6.21	610.					81400.	79100.	82000.	81400.	81400.	79100.
.006	26.6	7.32	.305	.0838	26.3	7.24	536.					49000.	47800.	49500.	49000.	49000.	47800.
.008	26.4	9.12	.400	.138	26.1	8.98	427.					22100.	21700.	22500.	22100.	22100.	21700.
.01	26.3	10.6	.492	.199	25.8	10.4	348.					11800.	11600.	12200.	11800.	11800.	11600.
.015	25.8	13.2	.713	.365	25.1	12.8	221.					3770.	3730.	4000.	3780.	3770.	3730.
K .018986	25.4	14.6	.874	.502	24.6	14.1	161.					1930.	1920.	2110.	1940.	1930.	1920.
												13900.	6140.	14100.	13900.	13900.	6140.
.02	25.3	15.0	.914	.541	24.4	14.5	150.					12100.	5690.	12300.	12100.	12100.	5690.
.03	24.5	17.1	1.27	.890	23.2	16.2	84.4					3950.	2550.	4050.	3970.	3950.	2550.
.04	23.7	18.1	1.58	1.21	22.1	16.9	54.6					1800.	1320.	1870.	1820.	1800.	1320.
.05	23.0	18.7	1.86	1.51	21.2	17.2	38.0					970.	764.	1030.	989.	972.	766.
.06	22.4	18.9	2.10	1.77	20.3	17.1	27.9					577.	475.	624.	596.	579.	477.
.08	21.2	18.8	2.48	2.20	18.7	16.6	16.8					252.	219.	288.	271.	254.	221.
.1	20.2	18.4	2.79	2.54	17.4	15.9	11.1					132.	118.	161.	150.	135.	121.
.15	18.2	17.3	3.30	3.14	14.9	14.2	5.20					40.4	37.5	62.9	57.7	43.7	40.6
.2	16.7	16.1	3.60	3.48	13.1	12.6	3.00					17.5	16.6	36.6	33.6	21.1	20.1
.3	14.5	14.2	3.91	3.83	10.6	10.4	1.36					5.40	5.21	21.0	19.6	9.31	9.04
.4	13.0	12.8	4.02	3.96	8.96	8.84	.773					2.48	2.41	16.1	15.3	6.50	6.37
.5	11.9	11.8	4.04	4.01	7.81	7.79	.501					1.42	1.39	13.7	13.2	5.46	5.40
.6	11.0	10.9	4.03	3.98	6.94	6.92	.350					.900	.884	12.1	11.8	4.93	4.86
.8	9.63	9.59	3.94	3.86	5.69	5.73	.196					.459	.453	10.2	10.0	4.40	4.31
1.	8.66	8.63	3.81	3.71	4.85	4.92	.127					.282	.279	9.04	8.91	4.09	3.99
1.5	7.04	7.02	3.48	3.39	3.55	3.63	.0570	.0900		.0900	.0275	.132	.131	7.30	7.24	3.70	3.55
2.	6.00	5.99	3.18	3.07	2.82	2.92	.0324	.330		.330	.153	.0830	.0826	6.44	6.40	3.59	3.31
3.	4.72	4.71	2.72	2.56	1.99	2.15	.0145	.885	.00165	.887	.550	.0450	.0448	5.66	5.64	3.65	3.15
4.	3.94	3.94	2.39	2.21	1.55	1.73	.00812	1.43	.00677	1.44	.993	.0293	.0292	5.42	5.41	3.86	3.23
5.	3.41	3.41	2.14	1.94	1.27	1.47	.00523	1.88	.0133	1.89	1.38	.0218	.0218	5.33	5.32	4.05	3.34
6.	3.01	3.01	1.94	1.72	1.07	1.29	.00360	2.26	.0207	2.28	1.72	.0171	.0171	5.31	5.31	4.24	3.46
8.	2.46	2.46	1.64	1.41	.820	1.05	.00205	2.86	.0350	2.89	2.23	.0121	.0121	5.36	5.36	4.54	3.65
10.	2.10	2.10	1.43	1.17	.664	.930	.00136	3.40	.0481	3.45	2.70	.00927	.00926	5.56	5.56	4.89	3.88
15.	1.55	1.55	1.10	.846	.450	.704		4.40	.0751	4.48	3.40	.00592	.00592	6.04	6.04	5.59	4.25
20.	1.25	1.25	.905	.656	.341	.594		5.11	.0955	5.21	3.72	.00437	.00437	6.46	6.46	6.12	4.38
30.	.907	.907	.678	.427	.229	.480		6.14	.125	6.26	4.12	.00289	.00289	7.17	7.17	6.94	4.55
40.	.721	.721	.548	.303	.173	.418		6.80	.147	6.95	4.22	.00214	.00214	7.67	7.67	7.50	4.53
50.	.602	.602	.463	.229	.139	.373		7.35	.163	7.51	4.21	.00169	.00169	8.11	8.11	7.97	4.44
60.	.518	.518	.402	.179	.116	.339		7.77	.176	7.95	4.17	.00139	.00139	8.47	8.47	8.35	4.35
80.	.409	.409	.321	.121	.0873	.288		8.30	.195	8.50	4.09	.00104	.00104	8.91	8.91	8.82	4.21
100.	.339	.339	.269	.0875	.0700	.252		8.80	.209	9.01	3.99			9.35	9.35	9.28	4.08

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(cm^2/g = 0.006482 × barns/atom)

E (MeV)	$(\frac{\mu}{\rho})^{KN}_{inc,t}$	$(\frac{\mu}{\rho})^{BD}_{inc,t}$	$(\frac{\mu}{\rho})^{KN}_{inc,a}$	$(\frac{\mu}{\rho})^{BD}_{inc,a}$	$(\frac{\mu}{\rho})^{KN}_{inc,s}$	$(\frac{\mu}{\rho})^{BD}_{inc,s}$	$(\frac{\mu}{\rho})_{coh}$	$(\frac{\mu}{\rho})_{\kappa_n}$	$(\frac{\mu}{\rho})_{\kappa_e}$	$(\frac{\mu}{\rho})_{\kappa,t}$	$(\frac{\mu}{\rho})_{\kappa,a}$	$(\frac{\mu}{\rho})_{\tau,t}$	$(\frac{\mu}{\rho})_{\tau,a}$	$(\frac{\mu}{\rho})_{tot,t}$	$(\frac{\mu}{\rho})_{tot,t-coh}$	$(\frac{\mu}{\rho})_{tot,a}$	$(\frac{\mu}{\rho})_{tot,en}$
.001	.176	.00626	.000343	.0000122	.176	.00625	6.81					6020.	6020.	6030.	6020.	6020.	6020.
.0015	.176	.0110	.000513	.0000322	.175	.0110	6.43					2060.	2060.	2070.	2060.	2060.	2060.
.002	.176	.0158	.000681	.0000611	.175	.0157	6.03					966.	966.	972.	966.	966.	966.
L_{III} .002370	.175	.0191	.000804	.0000875	.174	.0191	5.72					620.	620.	626.	620.	620.	620.
												2660.	2500.	2660.	2660.	2660.	2500.
L_{II} .002464	.175	.0200	.000836	.0000953	.174	.0200	5.65					2280.	2150.	2280.	2280.	2280.	2150.
												3140.	2960.	3140.	3140.	3140.	2960.
L_I .002698	.175	.0221	.000914	.000115	.174	.0220	5.46					2540.	2400.	2550.	2540.	2540.	2400.
												2890.	2740.	2900.	2890.	2890.	2740.
.003	.175	.0248	.00101	.000143	.174	.0246	5.23					2150.	2050.	2160.	2150.	2150.	2050.
.004	.174	.0331	.00134	.000254	.172	.0328	4.53					966.	933.	972.	966.	966.	933.
.005	.174	.0406	.00166	.000390	.172	.0403	3.95					528.	513.	532.	528.	528.	513.
.006	.172	.0474	.00198	.000543	.170	.0469	3.47					318.	310.	321.	318.	318.	310.
.008	.171	.0591	.00259	.000895	.169	.0582	2.77					143.	141.	146.	143.	143.	141.
.01	.170	.0687	.00319	.00129	.167	.0674	2.26					76.5	75.2	79.1	76.5	76.5	75.2
.015	.167	.0856	.00462	.00237	.163	.0830	1.43					24.4	24.2	25.9	24.5	24.4	24.2
K .018986	.165	.0946	.00567	.00325	.159	.0914	1.04					12.5	12.4	13.7	12.4	12.5	12.4
												90.1	39.8	91.4	90.1	90.1	39.8
.02	.164	.0972	.00592	.00351	.158	.0940	.972					78.4	36.9	79.7	78.4	78.4	36.9
.03	.159	.111	.00823	.00577	.150	.105	.547					25.6	16.5	26.3	25.7	25.6	16.5
.04	.154	.117	.0102	.00784	.143	.110	.354					11.7	8.56	12.1	11.8	11.7	8.56
.05	.149	.121	.0121	.00979	.137	.111	.246					6.29	4.95	6.68	6.41	6.30	4.97
.06	.145	.123	.0136	.0115	.132	.111	.181					3.74	3.08	4.04	3.86	3.75	3.09
.08	.137	.122	.0161	.0143	.121	.108	.109					1.63	1.42	1.87	1.76	1.68	1.43
.1	.131	.119	.0181	.0165	.113	.103	.0720					.856	.765	1.04	.972	.875	.784
.15	.118	.112	.0214	.0204	.0966	.0920	.0337					.262	.243	.408	.374	.283	.263
.2	.108	.104	.0233	.0226	.0849	.0817	.0194					.113	.108	.237	.218	.137	.138
.3	.0940	.0920	.0253	.0248	.0687	.0674	.00882					.0350	.0338	.136	.127	.0603	.0586
.4	.0843	.0830	.0261	.0257	.0581	.0573	.00501					.0161	.0156	.104	.0992	.0421	.0413
.5	.0771	.0765	.0262	.0260	.0506	.0505	.00325					.00920	.00901	.0888	.0856	.0354	.0350
.6	.0713	.0707	.0261	.0258	.0450	.0449	.00227					.00583	.00573	.0784	.0765	.0328	.0315
.8	.0624	.0622	.0255	.0250	.0369	.0371	.00127					.00298	.00294	.0661	.0648	.0285	.0279
1.	.0561	.0559	.0247	.0240	.0314	.0319	.000823					.00183	.00181	.0586	.0578	.0265	.0259
1.5	.0456	.0455	.0226	.0220	.0230	.0235	.000369	.000583		.000583	.000178	.000856	.000849	.0473	.0469	.0240	.0230
2.	.0389	.0388	.0206	.0199	.0183	.0189	.000210	.00214		.00214	.000992	.000538	.000535	.0417	.0415	.0233	.0215
3.	.0306	.0305	.0176	.0166	.0129	.0139	.0000940	.00574	.0000107	.00575	.00357	.000292	.000290	.0367	.0366	.0237	.0204
4.	.0255	.0255	.0155	.0143	.0100	.0112	.0000526	.00927	.0000439	.00933	.00644	.000190	.000189	.0351	.0351	.0250	.0209
5.	.0221	.0221	.0139	.0126	.00823	.00953	.0000339	.0122	.0000862	.0123	.00895	.000141	.000141	.0345	.0345	.0263	.0216
6.	.0195	.0195	.0126	.0111	.00694	.00836	.0000233	.0146	.000134	.0148	.0111	.000111	.000111	.0344	.0344	.0275	.0224
8.	.0159	.0159	.0106	.00914	.00532	.00681	.0000133	.0185	.000227	.0187	.0145	.0000784	.0000784	.0347	.0347	.0294	.0237
10.	.0136	.0136	.00927	.00758	.00430	.00603	.0000088	.0226	.000312	.0224	.0175	.0000601	.0000600	.0360	.0360	.0317	.0257
15.	.0100	.0100	.00713	.00548	.00292	.00456		.0285	.000487	.0290	.0220	.0000384	.0000384	.0392	.0392	.0362	.0275
20.	.00810	.00810	.00587	.00425	.00221	.00385		.0331	.000619	.0338	.0241	.0000283	.0000283	.0419	.0419	.0397	.0284
30.	.00588	.00588	.00439	.00277	.00148	.00311		.0398	.000810	.0406	.0267	.0000187	.0000187	.0465	.0465	.0450	.0295
40.	.00467	.00467	.00355	.00196	.00112	.00271		.0441	.000953	.0450	.0274	.0000139	.0000139	.0497	.0497	.0486	.0294
50.	.00390	.00390	.00300	.00148	.000901	.00242		.0476	.00106	.0487	.0273	.0000110	.0000110	.0526	.0526	.0517	.0288
60.	.00336	.00336	.00261	.00116	.000752	.00220		.0504	.00114	.0515	.0270	.00000900	.00000900	.0549	.0549	.0541	.0282
80.	.00265	.00265	.00208	.000784	.000566	.00187		.0538	.00126	.0551	.0265	.00000670	.00000670	.0578	.0578	.0572	.0273
100.	.00220	.00220	.00174	.000567	.000454	.00163		.0570	.00135	.0584	.0259			.0606	.0606	.0602	.0264

42 MOLYBDENUM
(barns/atom)

E (MeV)	KN $\sigma_{inc,t}$	BD $\sigma_{inc,t}$	KN $\sigma_{inc,a}$	BD $\sigma_{inc,a}$	KN $\sigma_{inc,e}$	BD $\sigma_{inc,e}$	σ_{coh}	$\sigma_{x,n}$	$\sigma_{x,e}$	$\sigma_{x,t}$	$\sigma_{x,a}$	$\sigma_{\gamma,t}$	$\sigma_{\gamma,a}$	$\sigma_{tot,t}$	$\sigma_{tot,t-coh}$	$\sigma_{tot,a}$	$\sigma_{tot,en}$
.001	27.8	1.02	.0542	.00199	27.8	1.02	1100.					1030000.	1030000.	1030000.	1030000.	1030000.	1030000.
.0015	27.8	1.78	.0810	.00519	27.7	1.77	1050.					352000.	352000.	353000.	352000.	352000.	352000.
.002	27.7	2.52	.108	.00978	27.6	2.51	981.					165000.	165000.	166000.	165000.	165000.	165000.
.002521	27.7	3.26	.135	.0159	27.5	3.24	912.					90300.	90300.	91200.	90300.	90300.	90300.
.002625	27.7	3.41	.140	.0173	27.5	3.39	899.					380000.	356000.	381000.	380000.	380000.	356000.
.002867	27.6	3.73	.153	.0207	27.5	3.71	868.					324000.	304000.	325000.	324000.	324000.	304000.
.003	27.6	3.91	.160	.0227	27.5	3.89	852.					448000.	420000.	449000.	448000.	448000.	420000.
.004	27.5	5.19	.212	.0399	27.3	5.15	737.					364000.	343000.	365000.	364000.	364000.	343000.
.005	27.4	6.36	.262	.0609	27.1	6.30	642.					415000.	391000.	416000.	415000.	415000.	391000.
.006	27.3	7.44	.312	.0852	27.0	7.35	564.					367000.	347000.	368000.	367000.	367000.	347000.
.008	27.1	9.29	.410	.141	26.7	9.15	448.					164000.	157000.	165000.	164000.	164000.	157000.
.01	26.9	10.8	.504	.202	26.4	10.6	366.					89700.	86700.	90300.	89700.	89700.	86700.
.015	26.4	13.4	.730	.371	25.7	13.0	233.					53800.	52300.	54400.	53800.	53800.	52300.
.02	26.0	15.2	.936	.549	25.0	14.7	159.					24400.	23900.	24900.	24400.	24400.	23900.
.02	26.0	15.2	.936	.548	25.0	14.7	159.					13100.	12900.	13500.	13100.	13100.	12900.
.03	25.1	17.4	1.31	.905	23.8	16.5	89.4					4180.	4130.	4430.	4190.	4180.	4130.
.04	24.3	18.5	1.62	1.23	22.7	17.3	57.9					1840.	1820.	2010.	1860.	1840.	1820.
.05	23.6	19.0	1.90	1.53	21.7	17.5	40.4					1840.	1820.	2010.	1860.	1840.	1820.
.06	22.9	19.3	2.15	1.81	20.8	17.5	29.7					13200.	5680.	13400.	13200.	13200.	5680.
.08	21.7	19.2	2.54	2.25	19.2	17.0	17.9					4310.	2670.	4420.	4330.	4310.	2670.
.1	20.7	18.8	2.86	2.59	17.8	16.2	11.8					1950.	1390.	2030.	1970.	1950.	1390.
.15	18.6	17.7	3.38	3.21	15.3	14.5	5.53					1050.	821.	1110.	1070.	1050.	823.
.2	17.1	16.5	3.69	3.57	13.4	12.9	3.19					630.	510.	679.	649.	632.	512.
.3	14.8	14.6	4.00	3.94	10.8	10.7	1.45					278.	238.	315.	297.	281.	240.
.4	13.3	13.1	4.12	4.05	9.18	9.05	.823					146.	129.	177.	165.	149.	132.
.5	12.1	12.0	4.14	4.08	8.00	7.92	.534					44.6	41.2	67.8	62.3	48.8	44.4
.6	11.2	11.2	4.13	4.09	7.11	7.11	.370					19.4	18.3	39.1	35.9	23.1	21.9
.8	9.87	9.82	4.03	3.96	5.83	5.86	.208					6.00	5.77	22.0	20.6	10.0	9.71
1.	8.87	8.84	3.90	3.79	4.97	5.05	.135					2.80	2.72	16.7	15.9	6.92	6.77
1.5	7.21	7.19	3.56	3.47	3.64	3.72	.0605	.0955		.0955	.0292	1.57	1.53	14.1	13.6	5.71	5.61
2.	6.14	6.14	3.26	3.14	2.88	3.00	.0344	.350		.350	.162	1.00	.981	12.6	12.2	5.13	5.07
3.	4.83	4.83	2.79	2.62	2.04	2.21	.0153	.930	.00169	.932	.578	.510	.503	10.5	10.3	4.54	4.46
4.	4.04	4.04	2.45	2.27	1.59	1.77	.00864	1.50	.00695	1.51	1.04	.310	.306	9.28	9.15	4.21	4.10
5.	3.49	3.49	2.19	1.98	1.30	1.51	.00557	1.97	.0136	1.98	1.45	.149	.148	7.49	7.43	3.80	3.65
6.	3.08	3.08	1.99	1.76	1.10	1.32	.00382	2.35	.0212	2.37	1.79	.093	.0925	6.62	6.58	3.70	3.30
8.	2.52	2.52	1.68	1.44	.840	1.08	.00216	3.00	.0359	3.04	2.34	.0500	.0498	5.83	5.81	3.77	3.25
10.	2.15	2.15	1.47	1.19	.680	.957	.00143	3.53	.0491	3.58	2.79	.0327	.0326	5.59	5.58	3.99	3.34
15.	1.59	1.59	1.13	.863	.461	.727		4.60	.0770	4.68	3.54	.0241	.0240	5.50	5.49	4.19	3.45
20.	1.28	1.28	.927	.668	.349	.612		5.38	.0978	5.48	3.91	.0190	.0190	5.47	5.47	4.38	3.57
30.	.929	.929	.694	.436	.235	.493		6.45	.128	6.58	4.31	.0135	.0135	5.58	5.57	4.73	3.79
40.	.738	.738	.561	.308	.177	.430		7.15	.150	7.30	4.39	.0104	.0104	5.74	5.74	5.06	3.99
50.	.617	.617	.475	.233	.142	.384		7.70	.166	7.87	4.39	.00861	.00860	6.28	6.28	5.82	4.41
60.	.531	.531	.412	.182	.119	.349		8.10	.180	8.28	4.31	.00486	.00486	6.76	6.76	6.41	4.58
80.	.419	.419	.329	.123	.0894	.296		8.75	.200	8.95	4.27	.00318	.00318	7.51	7.51	7.28	4.74
100.	.348	.348	.276	.0894	.0717	.259		9.25	.214	9.46	4.15	.00235	.00235	8.04	8.04	7.86	4.70
												.00185	.00185	8.49	8.49	8.35	4.62
												.00153	.00153	8.81	8.81	8.69	4.49
												.00113	.00113	9.37	9.37	9.28	4.39
														9.81	9.81	9.74	4.24

42 MOLYBDENUM

(cm²/g = 0.006277 x barns/atom)

E (MeV)	$(\frac{\mu}{\rho})^{KN}_{inc,t}$	$(\frac{\mu}{\rho})^{BD}_{inc,t}$	$(\frac{\mu}{\rho})^{KN}_{inc,a}$	$(\frac{\mu}{\rho})^{BD}_{inc,a}$	$(\frac{\mu}{\rho})^{KN}_{inc,s}$	$(\frac{\mu}{\rho})^{BD}_{inc,s}$	$(\frac{\mu}{\rho})_{coh}$	$(\frac{\mu}{\rho})_{\kappa n}$	$(\frac{\mu}{\rho})_{\kappa e}$	$(\frac{\mu}{\rho})_{\kappa,t}$	$(\frac{\mu}{\rho})_{\kappa,a}$	$(\frac{\mu}{\rho})_{\tau,t}$	$(\frac{\mu}{\rho})_{\tau,a}$	$(\frac{\mu}{\rho})_{tot,t}$	$(\frac{\mu}{\rho})_{tot,t-coh}$	$(\frac{\mu}{\rho})_{tot,a}$	$(\frac{\mu}{\rho})_{tot,en}$
.001	.175	.00640	.000340	.0000125	.175	.0064	6.90					6470.	6470.	6470.	6470.	6470.	6470.
.0015	.175	.0112	.000508	.0000326	.174	.0111	6.59					2210.	2210.	2220.	2210.	2210.	2210.
.002	.174	.0158	.000678	.0000614	.173	.0158	6.16					1040.	1040.	1040.	1040.	1040.	1040.
L_{III} .002521	.174	.0205	.000847	.0000998	.173	.0203	5.72					567.	567.	572.	567.	567.	567.
												2390.	2230.	2390.	2390.	2390.	2230.
L_{II} .002625	.174	.0214	.000879	.000109	.173	.0213	5.64					2030.	1910.	2040.	2030.	2030.	1910.
												2810.	2640.	2820.	2810.	2810.	2640.
L_{I} .002867	.173	.0234	.000960	.000130	.173	.0233	5.45					2280.	2150.	2290.	2280.	2280.	2150.
												2600.	2450.	2610.	2600.	2600.	2450.
.003	.173	.0245	.00100	.000142	.173	.0244	5.35					2300.	2180.	2310.	2300.	2300.	2180.
.004	.173	.0326	.00133	.000250	.171	.0323	4.63					1030.	985.	1040.	1030.	1030.	985.
.005	.172	.0399	.00164	.000382	.170	.0395	4.03					563.	544.	567.	563.	563.	544.
.006	.171	.0467	.00196	.000535	.169	.0461	3.54					338.	328.	341.	338.	338.	328.
.008	.170	.0583	.00257	.000885	.168	.0574	2.81					153.	150.	154.	153.	153.	150.
.01	.169	.0678	.00316	.00127	.166	.0665	2.30					82.2	81.0	84.7	82.2	82.2	81.0
.015	.166	.0841	.00458	.00233	.161	.0816	1.46					26.2	25.9	27.8	26.3	26.2	25.9
.02	.163	.0954	.00588	.00345	.157	.0923	.998					11.5	11.4	12.6	11.7	11.5	11.4
K .020000	.163	.0954	.00588	.00344	.157	.0923	.998					11.5	11.4	12.6	11.7	11.5	11.4
												82.9	35.7	84.1	82.9	82.9	35.7
.03	.158	.109	.00822	.00568	.149	.104	.561					27.1	16.8	27.7	27.2	27.1	16.8
.04	.153	.116	.0102	.00772	.142	.109	.363					12.2	8.73	12.7	12.4	12.2	8.73
.05	.148	.119	.0119	.00960	.136	.110	.254					6.59	5.15	6.97	6.72	6.59	5.17
.06	.144	.121	.0135	.0114	.131	.110	.186					3.95	3.20	4.26	4.07	3.97	3.21
.08	.136	.121	.0159	.0141	.121	.107	.112					1.75	1.49	1.98	1.86	1.76	1.51
.1	.130	.118	.0160	.0163	.112	.102	.0741					.916	.810	1.11	1.04	.938	.829
.15	.117	.111	.0212	.0201	.0960	.0910	.0347					.280	.259	.426	.391	.301	.279
.2	.107	.104	.0232	.0224	.0841	.0810	.0200					.122	.115	.245	.225	.145	.137
.3	.0929	.0916	.0251	.0247	.0678	.0672	.00910					.0377	.0362	.138	.129	.0628	.0609
.4	.0835	.0822	.0259	.0254	.0576	.0568	.00517					.0176	.0171	.105	.0998	.0434	.0425
.5	.0760	.0753	.0260	.0256	.0502	.0497	.00335					.00985	.00960	.0885	.0854	.0358	.0352
.6	.0703	.0703	.0259	.0257	.0446	.0446	.00232					.00628	.00616	.0791	.0766	.0322	.0318
.8	.0620	.0616	.0253	.0249	.0366	.0368	.00131					.00320	.00316	.0659	.0647	.0285	.0280
1.	.0557	.0555	.0245	.0238	.0312	.0317	.000847					.00195	.00192	.0583	.0574	.0264	.0257
1.5	.0453	.0451	.0223	.0218	.0228	.0234	.000380	.000599		.000599	.000183	.000935	.000929	.0470	.0466	.0239	.0229
2.	.0385	.0385	.0205	.0197	.0181	.0188	.000216	.00220		.00220	.00102	.000584	.000581	.0416	.0413	.0232	.0213
3.	.0303	.0303	.0175	.0164	.0128	.0139	.0000960	.00584	.0000106	.00585	.00363	.000314	.000313	.0366	.0365	.0237	.0204
4.	.0254	.0254	.0154	.0142	.00998	.0111	.0000542	.00942	.0000436	.00948	.00693	.000205	.000205	.0351	.0350	.0250	.0210
5.	.0219	.0219	.0137	.0124	.00816	.00948	.0000350	.0124	.0000854	.0124	.0091	.000151	.000151	.0345	.0345	.0263	.0217
6.	.0193	.0193	.0125	.0110	.00690	.00829	.0000240	.0148	.000133	.0149	.0112	.000119	.000119	.0343	.0343	.0275	.0224
8.	.0158	.0158	.0105	.00904	.00527	.00678	.0000136	.0188	.000225	.0191	.0147	.0000847	.0000847	.0350	.0350	.0297	.0238
10.	.0135	.0135	.00923	.00747	.00427	.00601	.0000090	.0222	.000308	.0225	.0175	.0000653	.0000653	.0360	.0360	.0318	.0250
15.	.00998	.00998	.00709	.00542	.00289	.00456		.0289	.000483	.0294	.0222	.0000415	.0000414	.0394	.0394	.0365	.0277
20.	.00803	.00803	.00582	.00419	.00219	.00384		.0338	.000614	.0344	.0245	.0000305	.0000305	.0424	.0424	.0402	.0287
30.	.00583	.00583	.00436	.00274	.00148	.00309		.0405	.000803	.0413	.0271	.0000200	.0000200	.0471	.0471	.0457	.0298
40.	.00463	.00463	.00352	.00193	.00111	.00270		.0449	.000942	.0458	.0276	.0000148	.0000148	.0505	.0505	.0493	.0295
50.	.00387	.00387	.00298	.00146	.000891	.00241		.0483	.00104	.0494	.0276	.0000116	.0000116	.0533	.0533	.0524	.0290
60.	.00333	.00333	.00259	.00114	.000747	.00219		.0508	.00113	.0520	.0271	.00000960	.00000960	.0553	.0553	.0545	.0282
80.	.00263	.00263	.00207	.000772	.000561	.00186		.0549	.00126	.0562	.0268	.00000710	.00000710	.0588	.0588	.0583	.0276
100.	.00218	.00218	.00173	.000561	.000450	.00163		.0581	.00134	.0594	.0260			.0616	.0616	.0611	.0266

43 TECHNETIUM
(barns/atom)

E (MeV)	KN $\sigma_{inc,t}$	BD $\sigma_{inc,t}$	KN $\sigma_{inc,a}$	BD $\sigma_{inc,a}$	KN $\sigma_{inc,s}$	BD $\sigma_{inc,s}$	σ_{coh}	$\sigma_{x,n}$	$\sigma_{x,e}$	$\sigma_{x,t}$	$\sigma_{x,a}$	$\sigma_{\gamma,t}$	$\sigma_{\gamma,a}$	$\sigma_{tot,t}$	$\sigma_{tot,t-coh}$	$\sigma_{tot,a}$	$\sigma_{tot,en}$
.001	28.5	1.14	.0555	.00222	28.4	1.14	1160.					1150000.	1150000.	1150000.	1150000.	1150000.	1150000.
.0015	28.4	1.96	.0829	.00572	28.4	1.95	1090.					394000.	394000.	395000.	394000.	394000.	394000.
.002	28.4	2.72	.110	.0106	28.3	2.71	1020.					184000.	184000.	185000.	184000.	184000.	184000.
L_{III} .002677	28.3	3.67	.147	.0190	28.2	3.65	931.					85500.	85500.	86400.	85500.	85500.	85500.
L_{II} .002793	28.3	3.83	.153	.0207	28.1	3.81	916.					354000.	330000.	355000.	354000.	354000.	330000.
												300000.	280000.	301000.	300000.	300000.	280000.
.003	28.3	4.10	.164	.0238	28.1	4.08	889.					415000.	387000.	416000.	415000.	415000.	387000.
L_I .003043	28.3	4.16	.166	.0245	28.1	4.14	884.					351000.	329000.	352000.	351000.	351000.	329000.
												339000.	318000.	340000.	339000.	339000.	318000.
.004	28.2	5.37	.217	.0413	27.9	5.33	771.					386000.	362000.	387000.	386000.	386000.	362000.
.005	28.1	6.53	.269	.0626	27.8	6.47	672.					181000.	172000.	182000.	181000.	181000.	172000.
.006	27.9	7.61	.320	.0871	27.6	7.52	590.					98400.	94700.	99100.	98400.	98400.	94700.
.008	27.7	9.48	.420	.144	27.3	9.34	468.					59400.	57500.	60000.	59400.	59400.	57500.
.01	27.5	11.0	.516	.206	27.0	10.8	383.					26800.	26200.	27300.	26800.	26800.	26200.
.015	27.0	13.7	.748	.379	26.3	13.3	246.					14400.	14100.	14800.	14400.	14400.	14100.
.02	26.6	15.5	.958	.559	25.6	14.9	168.					4610.	4550.	4870.	4620.	4610.	4550.
K .021044	26.5	15.8	1.00	.597	25.5	15.2	157.					2030.	2010.	2210.	2050.	2030.	2010.
												1770.	1750.	1940.	1790.	1770.	1750.
.03	25.7	17.7	1.34	.921	24.4	16.8	94.4					12500.	5260.	12700.	12500.	12500.	5260.
.04	24.9	18.9	1.66	1.26	23.2	17.6	61.3					4680.	2780.	4790.	4700.	4680.	2780.
.05	24.1	19.4	1.95	1.57	22.2	17.8	42.8					2130.	1480.	2210.	2150.	2130.	1480.
.06	23.5	19.7	2.20	1.85	21.3	17.9	31.5					1160.	877.	1220.	1180.	1160.	879.
.08	22.2	19.6	2.60	2.30	19.6	17.3	19.0					692.	551.	743.	712.	694.	553.
.1	21.2	19.2	2.92	2.65	18.3	16.6	12.5					304.	258.	343.	324.	307.	260.
.15	19.1	18.1	3.46	3.29	15.6	14.8	5.87					160.	141.	192.	179.	163.	144.
.2	17.5	16.9	3.78	3.65	13.7	13.2	3.39					49.6	45.6	73.6	67.7	53.1	48.9
.3	15.2	14.9	4.10	4.02	11.1	10.9	1.54					21.5	20.2	41.8	38.4	25.3	23.9
.4	13.6	13.4	4.22	4.14	9.40	9.26	.873					6.66	6.39	23.1	21.6	10.8	10.4
.5	12.4	12.3	4.24	4.18	8.19	8.12	.566					3.10	3.01	17.4	16.5	7.32	7.15
.6	11.5	11.4	4.23	4.16	7.28	7.24	.393					1.75	1.71	14.6	14.0	5.99	5.89
.8	10.1	10.1	4.13	4.07	5.97	6.03	.221					1.10	1.08	12.9	12.5	5.33	5.24
1.	9.08	9.05	3.99	3.88	5.09	5.17	.144					.568	.559	10.9	10.7	4.70	4.63
1.5	7.38	7.36	3.65	3.55	3.73	3.81	.0640	.101		.101	.0309	.349	.345	9.54	9.40	4.34	4.22
2.	6.29	6.28	3.34	3.21	2.95	3.07	.0366	.367		.367	.170	.163	.162	7.69	7.62	3.91	3.74
3.	4.95	4.94	2.85	2.68	2.09	2.26	.0163	.980	.00173	.982	.609	.102	.101	6.79	6.75	3.81	3.48
4.	4.14	4.14	2.51	2.32	1.63	1.82	.00918	1.57	.0071	1.58	1.09	.0556	.0554	5.99	5.98	3.89	3.34
5.	3.57	3.57	2.24	2.02	1.33	1.55	.00593	2.07	.0140	2.08	1.52	.0365	.0364	5.77	5.76	4.13	3.45
6.	3.16	3.16	2.03	1.79	1.12	1.37	.00407	2.48	.0217	2.50	1.88	.0269	.0268	5.68	5.68	4.35	3.57
8.	2.58	2.58	1.72	1.46	.860	1.12	.00228	3.13	.0367	3.17	2.44	.0214	.0214	5.69	5.68	4.55	3.69
10.	2.20	2.20	1.50	1.21	.696	.986	.00151	3.70	.0503	3.75	2.91	.0150	.0150	5.77	5.76	4.90	3.91
15.	1.63	1.63	1.16	.880	.472	.750		4.81	.0790	4.89	3.69	.0115	.0115	5.96	5.96	5.26	4.13
20.	1.31	1.31	.949	.680	.357	.630		5.60	.100	5.70	4.05	.00734	.00733	6.53	6.53	6.06	4.58
30.	.951	.951	.711	.443	.240	.508		6.70	.131	6.83	4.45	.00536	.00536	7.02	7.02	6.65	4.74
40.	.756	.756	.574	.313	.181	.443		7.45	.153	7.60	4.55	.00352	.00352	7.78	7.78	7.54	4.90
50.	.631	.631	.486	.237	.145	.394		8.05	.170	8.22	4.54	.00260	.00260	8.36	8.36	8.18	4.87
60.	.544	.544	.422	.186	.122	.358		8.47	.183	8.65	4.49	.00206	.00206	8.85	8.85	8.71	4.78
80.	.429	.429	.337	.125	.0915	.304		9.10	.204	9.30	4.40	.00170	.00170	9.20	9.20	9.07	4.68
100.	.356	.356	.283	.0911	.0734	.265		9.65	.219	9.87	4.28	.00126	.00126	9.73	9.73	9.64	4.53
														10.2	10.2	10.2	4.37

43 TECHNETIUM

(cm^2/g = 0.006083 x barns/atom)

E (MeV)	$(\frac{\mu}{\rho})^{KN}_{inc,t}$	$(\frac{\mu}{\rho})^{BD}_{inc,t}$	$(\frac{\mu}{\rho})^{KN}_{inc,a}$	$(\frac{\mu}{\rho})^{BD}_{inc,a}$	$(\frac{\mu}{\rho})^{KN}_{inc,s}$	$(\frac{\mu}{\rho})^{BD}_{inc,s}$	$(\frac{\mu}{\rho})_{coh}$	$(\frac{\mu}{\rho})_{\kappa n}$	$(\frac{\mu}{\rho})_{\kappa e}$	$(\frac{\mu}{\rho})_{\kappa,t}$	$(\frac{\mu}{\rho})_{\kappa,a}$	$(\frac{\mu}{\rho})_{\tau,t}$	$(\frac{\mu}{\rho})_{\tau,a}$	$(\frac{\mu}{\rho})_{tot,t}$	$(\frac{\mu}{\rho})_{tot,t-coh}$	$(\frac{\mu}{\rho})_{tot,a}$	$(\frac{\mu}{\rho})_{tot,en}$
.001	.173	.00693	.000338	.0000135	.173	.00693	7.06					7000.	7000.	7000.	7000.	7000.	7000.
.0015	.173	.0119	.000504	.0000348	.173	.0119	6.63					2400.	2400.	2400.	2400.	2400.	2400.
.002	.173	.0165	.000669	.0000645	.172	.0165	6.20					1120.	1120.	1130.	1120.	1120.	1120.
L_{III} .002677	.172	.0223	.000894	.000116	.172	.0222	5.66					520.	520.	526.	420.	520.	520.
												2150.	2010.	2160.	2150.	2190.	2010.
L_{II} .002793	.172	.0233	.000931	.000126	.171	.0232	5.57					1820.	1700.	1830.	1820.	1820.	1700.
												2520.	2350.	2530.	2520.	2420.	2350.
.003	.172	.0249	.000998	.000145	.171	.0248	5.41					2140.	2000.	2140.	2140.	2140.	2000.
L_I .003043	.172	.0253	.00101	.000149	.171	.0252	5.38					2060.	1930.	2070.	2060.	2060.	1930.
												2350.	2200.	2350.	2350.	2350.	2200.
.004	.172	.0327	.00132	.000251	.170	.0324	4.69					1100.	1050.	1110.	1100.	1100.	1050.
.005	.171	.0397	.00164	.000381	.169	.0394	4.09					599.	576.	603.	599.	599.	576.
.006	.170	.0463	.00195	.000530	.168	.0457	3.59					361.	350.	365.	361.	361.	350.
.008	.168	.0577	.00255	.000876	.166	.0568	2.85					163.	159.	166.	163.	163.	159.
.01	.167	.0669	.00314	.00125	.164	.0657	2.33					87.6	85.8	90.0	87.6	87.6	85.8
.015	.164	.0833	.00455	.00231	.160	.0809	1.50					28.0	27.7	29.6	28.1	28.0	27.7
.02	.162	.0943	.00583	.00340	.156	.0906	1.02					12.3	12.2	13.4	12.5	12.3	12.2
K .021044	.161	.0961	.00608	.00363	.155	.0925	.955					10.8	10.6	11.8	10.9	10.8	10.6
												76.0	32.0	77.3	76.0	76.0	32.0
.03	.156	.108	.00815	.00560	.148	.102	.574					28.5	16.9	29.1	28.6	28.5	16.9
.04	.151	.115	.0101	.00766	.141	.107	.373					13.0	9.00	13.4	13.1	13.0	9.00
.05	.147	.118	.0119	.00955	.135	.108	.260					7.06	5.33	7.42	7.18	7.06	5.35
.06	.143	.120	.0134	.0113	.130	.109	.192					4.21	3.35	4.52	4.33	4.22	3.36
.08	.135	.119	.0158	.0140	.119	.105	.116					1.85	1.57	2.09	1.97	1.87	1.58
.1	.129	.117	.0178	.0161	.111	.101	.0760					.973	.858	1.17	1.09	.992	.876
.15	.116	.110	.0210	.0200	.0949	.0900	.0357					.302	.277	.448	.412	.323	.297
.2	.106	.103	.0230	.0222	.0833	.0803	.0206					.131	.123	.254	.234	.154	.145
.3	.0925	.0906	.0249	.0245	.0675	.0663	.00937					.0405	.0389	.141	.131	.0657	.0633
.4	.0827	.0815	.0257	.0252	.0572	.0563	.00531					.0189	.0183	.106	.100	.0445	.0435
.5	.0754	.0748	.0258	.0254	.0498	.0494	.00344					.0106	.0104	.0888	.0852	.0364	.0358
.6	.0700	.0693	.0257	.0253	.0443	.0440	.00239					.00669	.00657	.0785	.0760	.0324	.0319
.8	.0614	.0614	.0251	.0248	.0363	.0367	.00134					.00346	.00340	.0663	.0651	.0286	.0282
1.	.0552	.0551	.0243	.0236	.0310	.0314	.000876					.00212	.00210	.0580	.0572	.0264	.0257
1.5	.0449	.0448	.0222	.0216	.0227	.0232	.000389	.000614		.000614	.000188	.000992	.000985	.0468	.0464	.0238	.0229
2.	.0383	.0382	.0203	.0195	.0179	.0187	.000223	.00223		.00223	.00103	.000620	.000614	.0413	.0411	.0232	.0212
3.	.0301	.0301	.0173	.0163	.0127	.0137	.0000992	.00596	.0000105	.00597	.00370	.000338	.000337	.0364	.0364	.0237	.0203
4.	.0252	.0252	.0153	.0141	.00992	.0111	.0000558	.00955	.0000432	.00961	.00663	.000222	.000221	.0351	.0350	.0251	.0210
5.	.0217	.0217	.0136	.0123	.00809	.00943	.0000361	.0126	.0000852	.0127	.00925	.000164	.000163	.0346	.0346	.0265	.0217
6.	.0192	.0192	.0123	.0109	.00681	.00833	.0000248	.0151	.0000132	.0152	.0114	.000130	.000130	.0346	.0346	.0277	.0224
8.	.0157	.0157	.0105	.00888	.00523	.00681	.0000139	.0190	.0000223	.0193	.0148	.0000912	.0000912	.0351	.0350	.0298	.0238
10.	.0134	.0134	.00912	.00736	.00423	.00600	.0000092	.0225	.0000306	.0228	.0177	.0000700	.0000700	.0363	.0363	.0320	.0251
15.	.00992	.00992	.00706	.00535	.00287	.00456		.0293	.0000481	.0297	.0224	.0000446	.0000446	.0397	.0397	.0369	.0274
20.	.00797	.00797	.00577	.00414	.00217	.00383		.0341	.0000608	.0347	.0246	.0000326	.0000326	.0427	.0427	.0405	.0288
30.	.00578	.00578	.00433	.00269	.00146	.00309		.0408	.0000797	.0415	.0271	.0000214	.0000214	.0473	.0473	.0459	.0298
40.	.00460	.00460	.00349	.00190	.00110	.00269		.0453	.0000931	.0462	.0277	.0000158	.0000158	.0509	.0509	.0498	.0296
50.	.00384	.00384	.00296	.00144	.000882	.00240		.0490	.00103	.0500	.0276	.0000125	.0000125	.0538	.0538	.0530	.0291
60.	.00331	.00331	.00257	.00113	.000742	.00218		.0515	.00111	.0526	.0273	.0000103	.0000103	.0560	.0560	.0552	.0285
80.	.00261	.00261	.00205	.00076	.000557	.00185		.0554	.00124	.0566	.0268	.00000770	.00000770	.0592	.0592	.0586	.0276
100.	.00217	.00217	.00172	.000554	.000446	.00161		.0587	.00133	.0600	.0260			.0620	.0620	.0620	.0266

44 RUTHENIUM
(barns/atom)

E (MeV)	KN $\sigma_{inc,t}$	BD $\sigma_{inc,t}$	KN $\sigma_{inc,a}$	BD $\sigma_{inc,a}$	KN $\sigma_{inc,s}$	BD $\sigma_{inc,s}$	σ_{coh}	$\sigma_{n,n}$	$\sigma_{n,e}$	$\sigma_{n,t}$	$\sigma_{n,a}$	$\sigma_{\gamma,t}$	$\sigma_{\gamma,a}$	$\sigma_{tot,t}$	$\sigma_{tot,t-coh}$	$\sigma_{tot,a}$	$\sigma_{tot,en}$
.001	29.2	1.19	.0568	.00232	29.1	1.19	1220.					1270000.	1270000.	1270000.	1270000.	1270000.	1270000.
.0015	29.1	2.03	.0849	.00592	29.0	2.02	1160.					435000.	435000.	436000.	435000.	435000.	435000.
.002	29.0	2.81	.113	.0109	28.9	2.80	1090.					205000.	205000.	206000.	205000.	205000.	205000.
L_{III} .002838	28.9	4.01	.159	.0220	28.8	3.99	970.					81100.	81100.	82100.	81100.	81100.	81100.
L_{II} .002967	28.9	4.18	.166	.0240	28.8	4.16	953.					330000.	306000.	331000.	330000.	330000.	306000.
												279000.	259000.	280000.	279000.	279000.	259000.
												385000.	357000.	386000.	385000.	385000.	357000.
.003	28.9	4.22	.168	.0245	28.8	4.20	948.					377000.	350000.	378000.	377000.	377000.	350000.
L_I .003224	28.9	4.51	.180	.0281	28.7	4.48	918.					316000.	295000.	317000.	316000.	316000.	295000.
												361000.	337000.	362000.	361000.	361000.	337000.
.004	28.8	5.47	.222	.0421	28.6	5.43	820.					198000.	187000.	199000.	198000.	198000.	187000.
.005	28.7	6.62	.275	.0634	28.4	6.56	712.					107000.	102000.	108000.	107000.	107000.	102000.
.006	28.6	7.68	.327	.0879	28.3	7.59	623.					65100.	62800.	65700.	65100.	65100.	62800.
.008	28.4	9.59	.430	.145	28.0	9.44	493.					29600.	28800.	30100.	29600.	29600.	28800.
.01	28.2	11.1	.528	.208	27.7	10.9	403.					15800.	15500.	16200.	15800.	15800.	15500.
.015	27.7	13.9	.765	.384	26.9	13.5	260.					5110.	5040.	5380.	5120.	5110.	5040.
.02	27.2	15.8	.981	.570	26.2	15.2	178.					2250.	2230.	2440.	2270.	2250.	2230.
K .022117	27.0	16.4	1.07	.648	25.9	15.8	155.					1690.	1670.	1860.	1710.	1690.	1670.
												11800.	4860.	12000.	11800.	11800.	4860.
.03	26.3	18.1	1.37	.942	24.9	17.2	99.9					5160.	2920.	5280.	5140.	5140.	2920.
.04	25.5	19.2	1.70	1.28	23.8	17.9	64.9					2340.	1580.	2420.	2360.	2340.	1580.
.05	24.7	19.8	1.99	1.60	22.7	18.2	45.4					1260.	932.	1330.	1280.	1260.	934.
.06	24.0	20.1	2.25	1.89	21.8	18.2	33.4					756.	592.	809.	776.	758.	594.
.08	22.8	20.0	2.67	2.34	20.1	17.7	20.1					333.	279.	373.	353.	336.	281.
.1	21.7	19.6	2.99	2.70	18.7	16.9	13.3					175.	152.	208.	195.	178.	155.
.15	19.5	18.5	3.54	3.36	16.0	15.1	6.24					54.6	49.9	79.3	73.1	58.1	53.3
.2	17.9	17.2	3.87	3.72	14.0	13.5	3.60					23.9	22.3	44.7	41.1	27.8	26.0
.3	15.5	15.2	4.19	4.10	11.4	11.1	1.63					7.40	7.08	24.2	22.6	11.6	11.2
.4	13.9	13.8	4.32	4.26	9.62	9.54	.928					3.43	3.32	18.2	17.2	7.75	7.58
.5	12.7	12.6	4.34	4.28	8.38	8.32	.602					1.95	1.90	15.2	14.5	6.29	6.18
.6	11.8	11.7	4.32	4.27	7.44	7.43	.417					1.23	1.20	13.3	12.9	5.55	5.47
.8	10.3	10.3	4.23	4.14	6.11	6.16	.235					.630	.620	11.2	10.9	4.86	4.76
1.	9.29	9.26	4.09	3.97	5.21	5.29	.152					.389	.384	9.80	9.65	4.48	4.35
1.5	7.55	7.53	3.73	3.63	3.81	3.90	.0680	.107		.107	.0327	.182	.180	7.89	7.82	4.02	3.84
2.	6.44	6.43	3.42	3.28	3.02	3.15	.0388	.387		.387	.180	.114	.113	6.97	6.93	3.92	3.57
3.	5.06	5.06	2.92	2.74	2.14	2.32	.0173	1.03	.00177	1.03	.648	.0614	.0611	6.17	6.15	4.01	3.44
4.	4.23	4.23	2.57	2.37	1.66	1.86	.00977	1.65	.00729	1.66	1.14	.0405	.0404	5.94	5.93	4.27	3.55
5.	3.66	3.66	2.30	2.07	1.36	1.59	.00630	2.17	.0143	2.18	1.59	.0300	.0299	5.88	5.87	4.51	3.69
6.	3.23	3.23	2.08	1.83	1.15	1.40	.00431	2.60	.0222	2.62	1.97	.0238	.0237	5.88	5.87	4.72	3.82
8.	2.64	2.64	1.76	1.49	.880	1.15	.00240	3.26	.0376	3.30	2.53	.0166	.0166	5.96	5.96	5.08	4.04
10.	2.25	2.25	1.54	1.24	.712	1.01	.00158	3.86	.0516	3.91	3.03	.0128	.0128	6.17	6.17	5.46	4.28
15.	1.67	1.67	1.18	.898	.483	.772		5.05	.0808	5.13	3.86	.00815	.00814	6.81	6.81	6.32	4.77
20.	1.34	1.34	.972	.693	.366	.647		5.88	.102	5.98	4.22	.00594	.00594	7.33	7.33	6.96	4.92
30.	.973	.973	.727	.450	.246	.523		7.01	.134	7.14	4.63	.00388	.00388	8.12	8.12	7.87	5.08
40.	.774	.774	.588	.318	.186	.456		7.80	.157	7.96	4.73	.00287	.00287	8.74	8.74	8.55	5.05
50.	.646	.646	.497	.240	.149	.406		8.40	.174	8.57	4.71	.00228	.00228	9.22	9.22	9.07	4.95
60.	.556	.556	.432	.189	.124	.367		8.89	.188	9.08	4.66	.00187	.00187	9.64	9.64	9.51	4.85
80.	.439	.439	.345	.127	.0937	.312		9.54	.208	9.75	4.58	.00138	.00138	10.2	10.2	10.1	4.71
100.	.364	.364	.289	.0925	.0751	.272		10.1	.223	10.3	4.45	.00109	.00109	10.7	10.7	10.6	4.54

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(cm²/g = 0.005959 x barns/atom)

E (MeV)	$(\frac{\mu}{\rho})^{KN}_{inc,t}$	$(\frac{\mu}{\rho})^{BD}_{inc,t}$	$(\frac{\mu}{\rho})^{KN}_{inc,a}$	$(\frac{\mu}{\rho})^{BD}_{inc,a}$	$(\frac{\mu}{\rho})^{KN}_{inc,s}$	$(\frac{\mu}{\rho})^{BD}_{inc,s}$	$(\frac{\mu}{\rho})_{coh}$	$(\frac{\mu}{\rho})_{\kappa n}$	$(\frac{\mu}{\rho})_{\kappa e}$	$(\frac{\mu}{\rho})_{\kappa,t}$	$(\frac{\mu}{\rho})_{\kappa,a}$	$(\frac{\mu}{\rho})_{\tau,t}$	$(\frac{\mu}{\rho})_{\tau,a}$	$(\frac{\mu}{\rho})_{tot,t}$	$(\frac{\mu}{\rho})_{tot,t-coh}$	$(\frac{\mu}{\rho})_{tot,a}$	$(\frac{\mu}{\rho})_{tot,en}$
.001	.174	.00709	.000338	.0000138	.173	.00709	7.27					7570.	7570.	7570.	7570.	7570.	7570.
.0015	.173	.0121	.000506	.0000353	.173	.0120	6.91					2590.	2590.	2600.	2590.	2590.	2590.
.002	.173	.0167	.000673	.0000650	.172	.0167	6.50					1220.	1220.	1230.	1220.	1220.	1220.
L_{III} .002838	.172	.0239	.000947	.000131	.172	.0238	5.78					483.	483.	489.	483.	483.	483.
L_{II} .002967	.172	.0249	.000989	.000143	.172	.0248	5.68					1970.	1820.	1970.	1970.	1970.	1820.
.003	.172	.0251	.00100	.000146	.172	.0250	5.65					1660.	1540.	1670.	1660.	1660.	1540.
L_I .003224	.172	.0269	.00107	.000167	.171	.0267	5.47					2290.	2130.	2300.	2290.	2290.	2130.
.004	.172	.0326	.00132	.000251	.170	.0324	4.89					2250.	2090.	2250.	2250.	2250.	2090.
.005	.171	.0394	.00164	.000378	.169	.0391	4.24					1880.	1760.	1890.	1880.	1880.	1760.
.006	.170	.0458	.00195	.000524	.169	.0452	3.71					2150.	2010.	2160.	2150.	2150.	2010.
.008	.169	.0571	.00256	.000864	.167	.0563	2.94					1180.	1110.	1190.	1180.	1180.	1110.
.01	.168	.0661	.00315	.00124	.165	.0650	2.40					638.	608.	644.	638.	638.	608.
.015	.165	.0828	.00456	.00229	.160	.0804	1.55					388.	374.	392.	388.	388.	374.
.02	.162	.0942	.00585	.00340	.156	.0906	1.06					176.	172.	179.	176.	176.	172.
K .022117	.161	.0977	.00638	.00386	.154	.0942	.924					94.2	92.4	96.5	94.2	94.2	92.4
.03	.157	.108	.00816	.00561	.148	.102	.595					30.5	30.0	32.1	30.5	30.5	30.0
.04	.152	.114	.0101	.00763	.142	.107	.387					13.4	13.3	14.5	13.5	13.4	13.3
.05	.147	.118	.0119	.00953	.135	.108	.271					10.1	9.95	11.1	10.2	10.1	9.95
.06	.143	.120	.0134	.0113	.130	.108	.199					70.3	29.0	71.5	70.3	70.3	29.0
.08	.136	.119	.0159	.0139	.120	.105	.120					30.7	17.4	31.5	30.9	30.7	17.4
.1	.129	.117	.0178	.0161	.111	.101	.0793					13.9	9.42	14.4	14.1	13.9	9.42
.15	.116	.110	.0211	.0200	.0953	.0900	.0372					7.51	5.55	7.93	7.63	7.51	5.57
.2	.107	.102	.0231	.0222	.0834	.0804	.0215					4.51	3.53	4.82	4.62	4.52	3.54
.3	.0924	.0906	.0250	.0244	.0679	.0661	.00971					1.98	1.66	2.22	2.10	2.00	1.67
.4	.0828	.0822	.0257	.0254	.0573	.0568	.00553					1.04	.906	1.24	1.16	1.06	.924
.5	.0757	.0751	.0259	.0255	.0499	.0496	.00359					.325	.297	.473	.436	.346	.318
.6	.0703	.0697	.0257	.0254	.0443	.0443	.00248					.142	.133	.266	.245	.166	.155
.8	.0614	.0614	.0252	.0247	.0364	.0367	.00140					.0441	.0422	.144	.135	.0691	.0667
1.	.0554	.0552	.0244	.0237	.0310	.0315	.000906					.0204	.0198	.108	.102	.0462	.0452
1.5	.0450	.0449	.0222	.0216	.0227	.0232	.000405	.000638		.000638	.000195	.0116	.0113	.0906	.0864	.0375	.0368
2.	.0384	.0383	.0204	.0195	.0180	.0188	.000231	.00231		.00231	.00107	.00733	.00715	.0793	.0769	.0331	.0326
3.	.0302	.0302	.0174	.0163	.0128	.0138	.000103	.00614	.0000105	.00614	.00381	.00375	.00369	.0667	.0650	.0290	.0284
4.	.0252	.0252	.0153	.0141	.00989	.0111	.0000582	.00983	.0000434	.00989	.00679	.00232	.00229	.0584	.0575	.0267	.0259
5.	.0218	.0218	.0137	.0123	.00810	.00947	.0000375	.0129	.0000852	.0130	.00947	.00108	.00107	.0470	.0466	.0240	.0229
6.	.0192	.0192	.0124	.0109	.00685	.00834	.0000257	.0155	.000132	.0156	.0117	.000679	.000673	.0415	.0413	.0234	.0213
8.	.0157	.0157	.0105	.00888	.00524	.00685	.0000143	.0194	.000224	.0197	.0151	.000366	.000364	.0368	.0366	.0239	.0205
10.	.0134	.0134	.00918	.00739	.00424	.00602	.0000094	.0230	.000307	.0233	.0181	.000241	.000241	.0354	.0353	.0254	.0212
15.	.00995	.00995	.00703	.00535	.00288	.00460		.0301	.000481	.0306	.0230	.000179	.000178	.0350	.0350	.0269	.0220
20.	.00799	.00799	.00579	.00413	.00218	.00386		.0350	.000608	.0356	.0251	.000142	.000141	.0350	.0350	.0281	.0228
30.	.00580	.00580	.00433	.00268	.00147	.00312		.0418	.000799	.0425	.0276	.0000989	.0000989	.0355	.0355	.0303	.0241
40.	.00461	.00461	.00350	.00189	.00111	.00272		.0465	.000936	.0474	.0282	.0000763	.0000763	.0368	.0368	.0325	.0255
50.	.00385	.00385	.00296	.00143	.000888	.00242		.0501	.00104	.0511	.0281	.0000486	.0000485	.0406	.0406	.0377	.0284
60.	.00331	.00331	.00257	.00113	.000739	.00219		.0530	.00112	.0541	.0278	.0000354	.0000354	.0437	.0437	.0415	.0293
80.	.00262	.00262	.00206	.000757	.000558	.00186		.0568	.00124	.0581	.0273	.0000231	.0000231	.0484	.0484	.0469	.0303
100.	.00217	.00217	.00172	.000551	.000448	.00162		.0602	.00133	.0614	.0265	.0000171	.0000171	.0521	.0521	.0509	.0301
												.0000136	.0000136	.0549	.0549	.0540	.0295
												.0000111	.0000111	.0574	.0574	.0567	.0289
												.0000082	.0000082	.0608	.0608	.0602	.0281
												.0000065	.0000065	.0638	.0638	.0632	.0271

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(barns/atom)

E (MeV)	$\sigma^{KN}_{inc,t}$	$\sigma^{BD}_{inc,t}$	$\sigma^{KN}_{inc,a}$	$\sigma^{BD}_{inc,a}$	$\sigma^{KN}_{inc,s}$	$\sigma^{BD}_{inc,s}$	σ_{coh}	$\sigma_{\pi n}$	$\sigma_{\pi e}$	$\sigma_{\pi,t}$	$\sigma_{\pi,a}$	$\sigma_{\gamma,t}$	$\sigma_{\gamma,a}$	$\sigma_{tot,t}$	$\sigma_{tot,t-coh}$	$\sigma_{tot,a}$	$\sigma_{tot,en}$
.001	29.8	1.22	.0581	.00238	29.8	1.22	1280.					1400000.	1400000.	1400000.	1400000.	1400000.	1400000.
.0015	29.8	2.06	.0868	.00601	29.7	2.05	1220.					478000.	478000.	479000.	478000.	478000.	478000.
.002	29.7	2.85	.115	.0111	29.6	2.84	1150.					226000.	226000.	227000.	226000.	226000.	226000.
.003	29.6	4.27	.171	.0247	29.4	4.25	999.					77100.	77100.	78100.	77100.	77100.	77100.
L_{III} .003004	29.6	4.28	.172	.0248	29.4	4.26	999.					77000.	77000.	78000.	77000.	77000.	77000.
												308000.	284000.	309000.	308000.	308000.	284000.
L_{II} .003146	29.6	4.46	.180	.0271	29.4	4.43	978.					259000.	239000.	260000.	259000.	259000.	239000.
												358000.	330000.	359000.	358000.	358000.	330000.
L_{I} .003412	29.5	4.80	.194	.0316	29.3	4.77	942.					295000.	274000.	296000.	295000.	295000.	274000.
												337000.	313000.	338000.	337000.	337000.	313000.
.004	29.5	5.52	.227	.0425	29.2	5.48	865.					216000.	203000.	217000.	216000.	216000.	203000.
.005	29.4	6.69	.281	.0641	29.1	6.63	750.					117000.	111000.	118000.	117000.	117000.	111000.
.006	29.2	7.77	.335	.0890	28.9	7.68	656.					71300.	68400.	72000.	71300.	71300.	68400.
.008	29.0	9.71	.439	.147	28.6	9.56	517.					32400.	31400.	32900.	32400.	32400.	31400.
.01	28.8	11.3	.540	.212	28.3	11.1	422.					17400.	17000.	17800.	17400.	17400.	17000.
.015	28.3	14.2	.783	.393	27.5	13.8	274.					5600.	5510.	5890.	5610.	5600.	5510.
.02	27.8	16.1	1.00	.581	26.8	15.5	188.					2480.	2450.	2680.	2500.	2480.	2450.
K .023220	27.5	17.0	1.14	.703	26.4	16.3	153.					1630.	1610.	1800.	1650.	1630.	1610.
												11200.	4510.	11400.	11200.	11200.	4510.
.03	26.9	18.4	1.40	.958	25.5	17.4	106.					5580.	3000.	5700.	5600.	5580.	3000.
.04	26.0	19.6	1.74	1.31	24.3	18.3	68.6					2530.	1650.	2620.	2550.	2530.	1650.
.05	25.3	20.2	2.04	1.63	23.2	18.6	48.1					1370.	990.	1440.	1390.	1370.	992.
.06	24.6	20.5	2.30	1.92	22.3	18.6	35.4					823.	633.	879.	843.	825.	635.
.08	23.3	20.4	2.73	2.39	20.6	18.0	21.3					364.	301.	406.	384.	367.	303.
.1	22.2	20.0	3.06	2.76	19.1	17.2	14.1					192.	165.	226.	212.	195.	168.
.15	20.0	18.9	3.62	3.43	16.3	15.5	6.61					60.0	54.5	85.5	78.9	63.6	57.9
.2	18.3	17.6	3.95	3.81	14.3	13.8	3.81					26.2	24.4	47.6	43.8	30.1	28.2
.3	15.9	15.6	4.29	4.21	11.6	11.4	1.73					8.15	7.77	25.5	23.7	12.4	12.0
.4	14.2	14.1	4.41	4.34	9.84	9.76	.984					3.80	3.67	18.9	17.9	8.21	8.01
.5	13.0	12.9	4.44	4.39	8.57	8.51	.638					2.14	2.08	15.7	15.0	6.58	6.47
.6	12.0	11.9	4.42	4.34	7.61	7.56	.441					1.36	1.33	13.7	13.3	5.78	5.67
.8	10.6	10.5	4.32	4.22	6.25	6.28	.249					.698	.686	11.4	11.2	5.02	4.91
1.	9.50	9.47	4.18	4.06	5.32	5.41	.161					.430	.424	10.1	9.90	4.61	4.48
1.5	7.72	7.71	3.82	3.72	3.90	3.99	.0723	.113		.113	.0346	.200	.198	8.10	8.02	4.13	3.99
2.	6.58	6.58	3.49	3.36	3.09	3.22	.0411	.406		.406	.188	.125	.124	7.15	7.11	4.02	3.87
3.	5.18	5.17	2.99	2.79	2.19	2.38	.0183	1.08	.00181	1.08	.670	.0682	.0679	6.34	6.32	4.14	3.53
4.	4.33	4.33	2.63	2.42	1.70	1.91	.0104	1.72	.00744	1.73	1.19	.0448	.0446	6.12	6.10	4.40	3.65
5.	3.74	3.74	2.35	2.11	1.39	1.63	.00669	2.27	.0146	2.28	1.66	.0331	.0330	6.06	6.05	4.66	3.80
6.	3.38	3.30	2.13	1.86	1.18	1.44	.00458	2.71	.0227	2.73	2.05	.0261	.0260	6.06	6.06	4.89	3.94
8.	2.70	2.70	1.80	1.52	.900	1.18	.00253	3.41	.0384	3.45	2.63	.0184	.0184	6.17	6.17	5.27	4.17
10.	2.30	2.30	1.57	1.26	.729	1.04	.00166	4.05	.0527	4.10	3.17	.0143	.0143	6.42	6.41	5.68	4.44
15.	1.70	1.70	1.21	.909	.494	.790		5.25	.0826	5.33	4.00	.00909	.00908	7.04	7.04	6.55	4.92
20.	1.37	1.37	.994	.703	.374	.667		6.11	.104	6.21	4.37	.00668	.00668	7.59	7.59	7.21	5.08
30.	.995	.995	.744	.458	.252	.537		7.31	.137	7.45	4.82	.00430	.00430	8.45	8.45	8.20	5.28
40.	.791	.791	.601	.324	.190	.467		8.11	.161	8.27	4.89	.00317	.00317	9.06	9.06	8.87	5.22
50.	.661	.661	.508	.245	.152	.416		8.78	.178	8.96	4.88	.00250	.00250	9.62	9.62	9.47	5.13
60.	.569	.569	.441	.192	.127	.377		9.26	.192	9.45	4.83	.00206	.00206	10.0	10.0	9.89	5.02
80.	.449	.449	.353	.130	.0958	.319		9.95	.213	10.2	4.74	.00152	.00152	10.7	10.7	10.6	4.87
100.	.373	.373	.296	.0944	.0768	.279		10.5	.228	10.7	4.58	.00119	.00119	11.1	11.1	11.0	4.66

45 RHODIUM
(cm^2/g = 0.005853 × barns/atom)

E (MeV)	$(\frac{\mu}{\rho})^{KN}_{inc,t}$	$(\frac{\mu}{\rho})^{BD}_{inc,t}$	$(\frac{\mu}{\rho})^{KN}_{inc,a}$	$(\frac{\mu}{\rho})^{BD}_{inc,a}$	$(\frac{\mu}{\rho})^{KN}_{inc,s}$	$(\frac{\mu}{\rho})^{BD}_{inc,s}$	$(\frac{\mu}{\rho})_{coh}$	$(\frac{\mu}{\rho})_{\kappa_n}$	$(\frac{\mu}{\rho})_{\kappa_e}$	$(\frac{\mu}{\rho})_{\kappa,t}$	$(\frac{\mu}{\rho})_{\kappa,a}$	$(\frac{\mu}{\rho})_{\tau,t}$	$(\frac{\mu}{\rho})_{\tau,a}$	$(\frac{\mu}{\rho})_{tot,t}$	$(\frac{\mu}{\rho})_{tot,t-coh}$	$(\frac{\mu}{\rho})_{tot,a}$	$(\frac{\mu}{\rho})_{tot,en}$
.001	.174	.00714	.000340	.0000139	.174	.00714	7.49					8190.	8190.	8190.	8190.	8190.	8190.
.0015	.174	.0121	.000508	.0000352	.174	.0120	7.14					2800.	2800.	2800.	2800.	2800.	2800.
.002	.174	.0167	.000673	.0000650	.173	.0166	6.73					1320.	1320.	1330.	1320.	1320.	1320.
.003	.173	.0250	.00100	.000145	.172	.0249	5.85					451.	451.	457.	451.	451.	451.
L_{III} .003004	.173	.0251	.00101	.000145	.172	.0249	5.85					451.	451.	457.	451.	451.	451.
												1800.	1660.	1810.	1800.	1800.	1660.
L_{II} .003146	.173	.0261	.00105	.000159	.172	.0259	5.72					1520.	1400.	1520.	1520.	1520.	1400.
												2100.	1930.	2100.	2100.	2100.	1930.
L_I .003412	.173	.0281	.00114	.000185	.171	.0279	5.51					1730.	1600.	1730.	1730.	1730.	1600.
												1970.	1830.	1960.	1970.	1970.	1830.
.004	.173	.0323	.00133	.000249	.171	.0321	5.06					1260.	1190.	1270.	1260.	1260.	1190.
.005	.172	.0392	.00164	.000375	.170	.0388	4.39					685.	650.	691.	685.	685.	650.
.006	.171	.0455	.00196	.000521	.169	.0450	3.84					417.	400.	421.	417.	417.	400.
.008	.170	.0568	.00257	.000860	.167	.0560	3.03					190.	186.	193.	190.	190.	184.
.01	.169	.0661	.00316	.00124	.166	.0650	2.47					102.	99.5	104.	102.	102.	99.5
.015	.166	.0831	.00458	.00230	.161	.0808	1.60					32.8	32.3	34.5	32.8	32.8	32.3
.02	.163	.0942	.00585	.00340	.157	.0907	1.10					14.5	14.3	15.7	14.6	14.5	14.3
K .023220	.161	.0995	.00667	.00411	.155	.0954	.896					9.54	9.42	10.5	9.66	9.54	9.42
												65.6	26.4	66.7	65.6	65.6	26.4
.03	.157	.108	.00819	.00561	.149	.102	.620					32.7	17.6	33.4	32.8	32.7	17.6
.04	.152	.115	.0102	.00767	.142	.107	.402					14.8	9.66	15.3	14.9	14.8	9.66
.05	.148	.118	.0119	.00954	.136	.109	.282					8.02	5.79	8.43	8.14	8.02	5.81
.06	.144	.120	.0135	.0112	.131	.109	.207					4.82	3.70	5.14	4.93	4.83	3.72
.08	.136	.119	.0160	.0140	.121	.105	.125					2.13	1.76	2.38	2.25	2.15	1.77
.1	.130	.117	.0179	.0162	.112	.101	.0825					1.12	.966	1.32	1.24	1.14	.983
.15	.117	.111	.0212	.0201	.0954	.0907	.0387					.351	.319	.500	.462	.372	.339
.2	.107	.103	.0231	.0223	.0837	.0808	.0223					.153	.143	.279	.256	.176	.165
.3	.0931	.0913	.0251	.0246	.0679	.0667	.0101					.0477	.0455	.149	.139	.0726	.0702
.4	.0831	.0825	.0258	.0254	.0576	.0571	.00576					.0222	.0215	.111	.105	.0481	.0469
.5	.0761	.0755	.0260	.0257	.0502	.0498	.00373					.0125	.0122	.0919	.0878	.0385	.0379
.6	.0702	.0697	.0259	.0254	.0445	.0442	.00258					.00796	.00778	.0802	.0778	.0338	.0332
.8	.0620	.0615	.0253	.0247	.0366	.0368	.00146					.00409	.00402	.0667	.0656	.0294	.0287
1.	.0556	.0554	.0245	.0238	.0311	.0317	.000942					.00252	.00248	.0591	.0579	.0270	.0262
1.5	.0452	.0451	.0224	.0218	.0228	.0234	.000423	.000661		.000661	.000203	.00117	.00116	.0474	.0469	.0242	.0231
2.	.0385	.0385	.0204	.0197	.0181	.0188	.000241	.00238		.00238	.00110	.000732	.000726	.0418	.0416	.0235	.0215
3.	.0303	.0303	.0175	.0163	.0128	.0139	.000107	.00632	.0000106	.00632	.00392	.000399	.000397	.0371	.0370	.0242	.0207
4.	.0253	.0253	.0154	.0142	.00995	.0112	.0000609	.0101	.0000435	.0101	.00697	.000262	.000261	.0358	.0357	.0258	.0214
5.	.0219	.0219	.0138	.0123	.00814	.00954	.0000392	.0133	.0000855	.0133	.00972	.000194	.000193	.0355	.0354	.0273	.0222
6.	.0193	.0193	.0125	.0109	.00691	.00843	.0000268	.0159	.000133	.0160	.0120	.000153	.000152	.0355	.0355	.0286	.0231
8.	.0158	.0158	.0105	.00890	.00527	.00691	.0000148	.0200	.000225	.0202	.0154	.000108	.000108	.0361	.0361	.0308	.0244
10.	.0135	.0135	.00919	.00737	.00427	.00609	.0000097	.0237	.000308	.0240	.0186	.0000837	.0000837	.0376	.0375	.0332	.0260
15.	.00995	.00995	.00708	.00532	.00289	.00462		.0307	.000483	.0312	.0234	.0000532	.0000531	.0412	.0412	.0383	.0288
20.	.00802	.00802	.00582	.00411	.00219	.00390		.0358	.000609	.0363	.0256	.0000391	.0000391	.0444	.0444	.0422	.0297
30.	.00582	.00582	.00435	.00268	.00147	.00314		.0428	.000802	.0436	.0282	.0000252	.0000252	.0495	.0495	.0480	.0309
40.	.00463	.00463	.00352	.00190	.00111	.00273		.0475	.000942	.0484	.0286	.0000186	.0000186	.0530	.0530	.0519	.0306
50.	.00387	.00387	.00297	.00143	.000890	.00243		.0514	.00104	.0524	.0286	.0000146	.0000146	.0563	.0563	.0554	.0300
60.	.00333	.00333	.00258	.00112	.000743	.00221		.0542	.00112	.0553	.0283	.0000121	.0000121	.0585	.0585	.0579	.0294
80.	.00263	.00263	.00207	.000761	.000561	.00187		.0582	.00125	.0597	.0277	.00000890	.00000890	.0626	.0626	.0620	.0285
100.	.00218	.00218	.00173	.000553	.000450	.00163		.0615	.00133	.0626	.0268	.00000700	.00000700	.0650	.0650	.0644	.0274

46 PALLADIUM
(barns/atom)

E (MeV)	$\sigma^{KN}_{inc,t}$	$\sigma^{BD}_{inc,t}$	$\sigma^{KN}_{inc,a}$	$\sigma^{BD}_{inc,a}$	$\sigma^{KN}_{inc,s}$	$\sigma^{BD}_{inc,s}$	σ_{coh}	σ_{xn}	σ_{xe}	$\sigma_{x,t}$	$\sigma_{x,a}$	$\sigma_{\gamma,t}$	$\sigma_{\gamma,a}$	$\sigma_{tot,t}$	$\sigma_{tot,t-coh}$	$\sigma_{tot,a}$	$\sigma_{tot,en}$
.001	30.5	.757	.0594	.00147	30.4	.756	1350.					1550000.	1550000.	1550000.	1550000.	1550000.	1550000.
.0015	30.4	1.50	.0887	.00438	30.3	1.50	1290.					528000.	528000.	529000.	528000.	528000.	528000.
.002	30.4	2.30	.118	.00892	30.2	2.29	1220.					249000.	249000.	250000.	249000.	249000.	249000.
.003	30.2	3.81	.175	.0221	30.1	3.79	1060.					84600.	84600.	85700.	84600.	84600.	84600.
L_{III} .003174	30.2	4.05	.185	.0248	30.0	4.03	1040.					73300.	73300.	74300.	73300.	73300.	73300.
												288000.	264000.	289000.	288000.	288000.	264000.
L_{II} .003330	30.2	4.27	.194	.0274	30.0	4.24	1010.					242000.	223000.	243000.	242000.	242000.	223000.
												334000.	307000.	335000.	334000.	334000.	307000.
L_{I} .003605	30.2	4.64	.210	.0322	30.0	4.61	974.					276000.	255000.	277000.	276000.	276000.	255000.
												316000.	292000.	317000.	316000.	316000.	292000.
.004	30.1	5.16	.232	.0397	29.9	5.12	919.					236000.	220000.	237000.	236000.	236000.	220000.
.005	30.0	6.42	.287	.0615	29.7	6.36	795.					128000.	121000.	129000.	128000.	128000.	121000.
.006	29.9	7.58	.342	.0868	29.6	7.49	693.					78000.	74400.	78700.	78000.	78000.	74400.
.008	29.7	9.66	.449	.146	29.2	9.51	545.					35400.	34200.	36000.	35400.	35400.	34200.
.01	29.5	11.4	.552	.214	28.9	11.2	444.					18900.	18400.	19400.	18900.	18900.	18400.
.015	28.9	14.3	.800	.396	28.1	13.9	289.					6160.	6050.	6460.	6170.	6160.	6050.
.02	28.4	16.3	1.03	.588	27.4	15.7	199.					2730.	2690.	2950.	2750.	2730.	2690.
K .024350	28.0	17.6	1.21	.760	26.8	16.8	151.					1560.	1540.	1730.	1580.	1560.	1540.
												10600.	4180.	10800.	10600.	10600.	4180.
.03	27.5	18.7	1.43	.973	26.1	17.7	111.					6000.	3050.	6130.	6020.	6000.	3050.
.04	26.6	19.9	1.78	1.33	24.8	18.6	72.4					2750.	1740.	2840.	2770.	2750.	1740.
.05	25.8	20.6	2.08	1.66	23.7	18.9	50.8					1490.	1050.	1560.	1510.	1490.	1050.
.06	25.1	20.8	2.35	1.95	22.7	18.8	37.5					896.	676.	954.	917.	898.	678.
.08	23.8	20.8	2.79	2.44	21.0	18.4	22.6					397.	324.	440.	418.	400.	326.
.1	22.7	20.4	3.13	2.82	19.5	17.6	14.9					210.	179.	245.	230.	213.	182.
.15	20.4	19.3	3.70	3.50	16.7	15.8	7.00					66.0	59.5	92.3	85.3	69.7	63.0
.2	18.7	18.0	4.04	3.89	14.7	14.1	4.04					28.7	26.6	50.7	46.7	32.7	30.5
.3	16.3	15.9	4.38	4.29	11.9	11.6	1.84					9.00	8.56	26.7	24.9	13.4	12.8
.4	14.6	14.4	4.51	4.44	10.1	9.96	1.04					4.20	4.05	19.6	18.6	8.71	8.49
.5	13.3	13.2	4.54	4.49	8.76	8.71	.677					2.37	2.30	16.2	15.6	6.91	6.79
.6	12.3	12.2	4.52	4.45	7.78	7.75	.467					1.50	1.46	14.2	13.7	6.02	5.91
.8	10.8	10.8	4.42	4.34	6.39	6.46	.263					.770	.756	11.8	11.6	5.19	5.10
1.	9.72	9.68	4.27	4.15	5.44	5.53	.170					.476	.469	10.3	10.2	4.75	4.82
1.5	7.89	7.88	3.90	3.79	3.99	4.09	.0765	.120		.120	.0367	.221	.219	8.30	8.22	4.24	4.09
2.	6.73	6.72	3.57	3.43	3.16	3.29	.0434	.427		.427	.198	.139	.138	7.33	7.29	4.14	3.77
3.	5.29	5.29	3.05	2.86	2.24	2.43	.0193	1.13	.00185	1.13	.701	.0750	.0746	6.51	6.49	4.25	3.84
4.	4.43	4.43	2.69	2.47	1.74	1.96	.0110	1.80	.00760	1.81	1.24	.0493	.0491	6.30	6.29	4.55	3.76
5.	3.82	3.82	2.40	2.15	1.42	1.67	.00710	2.38	.0150	2.39	1.74	.0368	.0367	6.25	6.25	4.83	3.93
6.	3.38	3.38	2.17	1.90	1.20	1.48	.00485	2.83	.0232	2.85	2.14	.0290	.0289	6.26	6.26	5.05	4.07
8.	2.76	2.76	1.84	1.55	.920	1.21	.00266	3.56	.0393	3.60	2.75	.0201	.0201	6.38	6.38	5.46	4.32
10.	2.35	2.35	1.61	1.28	.745	1.07	.00173	4.20	.0539	4.25	3.28	.0157	.0157	6.62	6.62	5.88	4.58
15.	1.74	1.74	1.24	.927	.505	.813		5.50	.0844	5.58	4.16	.00997	.00996	7.33	7.33	6.83	5.10
20.	1.40	1.40	1.02	.715	.382	.685		6.40	.107	6.51	4.57	.00729	.00728	7.92	7.92	7.54	5.29
30.	1.02	1.02	.760	.467	.257	.553		7.61	.140	7.75	4.98	.00474	.00474	8.77	8.77	8.51	5.45
40.	.809	.809	.615	.329	.194	.480		8.50	.164	8.66	5.09	.00349	.00349	9.47	9.47	9.28	5.42
50.	.675	.675	.520	.250	.155	.425		9.15	.182	9.33	5.05	.00275	.00275	10.0	10.0	9.85	5.30
60.	.581	.581	.451	.195	.130	.386		9.65	.196	9.85	5.00	.00226	.00226	10.4	10.4	10.3	5.20
80.	.459	.459	.361	.132	.0979	.327		10.3	.217	10.5	4.87	.00167	.00167	11.0	11.0	10.9	5.00
100.	.381	.381	.302	.0960	.0785	.285		11.0	.233	11.2	4.77	.00130	.00130	11.6	11.6	11.5	4.87

46 PALLADIUM

(cm^2/g = 0.005660 x barns/atom)

E (MeV)	$(\frac{\mu}{\rho})^{KN}_{inc,t}$	$(\frac{\mu}{\rho})^{BD}_{inc,t}$	$(\frac{\mu}{\rho})^{KN}_{inc,a}$	$(\frac{\mu}{\rho})^{BD}_{inc,a}$	$(\frac{\mu}{\rho})^{KN}_{inc,s}$	$(\frac{\mu}{\rho})^{BD}_{inc,s}$	$(\frac{\mu}{\rho})_{coh}$	$(\frac{\mu}{\rho})_{\kappa n}$	$(\frac{\mu}{\rho})_{\kappa e}$	$(\frac{\mu}{\rho})_{\kappa,t}$	$(\frac{\mu}{\rho})_{\kappa,a}$	$(\frac{\mu}{\rho})_{\tau,t}$	$(\frac{\mu}{\rho})_{\tau,a}$	$(\frac{\mu}{\rho})_{tot,t}$	$(\frac{\mu}{\rho})_{tot,t-coh}$	$(\frac{\mu}{\rho})_{tot,a}$	$(\frac{\mu}{\rho})_{tot,en}$
.001	.173	.00428	.000336	.0000083	.172	.00428	7.64					8770.	8770.	8770.	8770.	8770.	8770.
.0015	.172	.00849	.000502	.0000248	.171	.00849	7.30					2990.	2990.	2990.	2990.	2990.	2990.
.002	.172	.0130	.000668	.0000505	.171	.0130	6.91					1410.	1410.	1410.	1410.	1410.	1410.
.003	.171	.0216	.000990	.000125	.170	.0215	6.00					479.	479.	485.	479.	479.	479.
L_{III} .003174	.171	.0229	.00105	.000140	.170	.0228	5.89					415.	415.	421.	415.	415.	415.
												1630.	1490.	1640.	1630.	1630.	1490.
L_{II} .003338	.171	.0242	.00110	.000155	.170	.0240	5.72					1370.	1260.	1380.	1370.	1370.	1260.
												1890.	1740.	1900.	1890.	1890.	1740.
L_{I} .003605	.171	.0263	.00119	.000182	.170	.0261	5.51					1560.	1440.	1570.	1560.	1560.	1440.
												1790.	1650.	1790.	1790.	1790.	1650.
.004	.170	.0292	.00131	.000225	.169	.0290	5.20					1340.	1250.	1340.	1340.	1340.	1250.
.005	.170	.0363	.00162	.000348	.168	.0360	4.50					724.	685.	730.	724.	724.	685.
.006	.169	.0429	.00194	.000491	.168	.0424	3.92					441.	421.	445.	441.	441.	421.
.008	.168	.0547	.00254	.000826	.165	.0538	3.08					200.	194.	204.	200.	200.	194.
.01	.167	.0645	.00312	.00121	.164	.0634	2.51					107.	104.	110.	107.	107.	104.
.015	.164	.0809	.00453	.00224	.159	.0787	1.64					34.9	34.2	36.6	34.9	34.9	34.2
.02	.161	.0923	.00583	.00333	.155	.0889	1.13					15.5	15.2	16.7	15.6	15.5	15.2
K .024350	.158	.0996	.00685	.00430	.152	.0951	.855					8.83	8.72	9.79	8.94	8.83	8.72
												60.0	23.7	61.1	60.0	60.0	23.7
.03	.156	.106	.00809	.00551	.148	.100	.628					34.0	17.3	34.7	34.1	34.0	17.3
.04	.151	.113	.0101	.00753	.140	.105	.410					15.6	9.85	16.1	15.7	15.6	9.85
.05	.146	.117	.0118	.00940	.134	.107	.288					8.43	5.94	8.83	8.55	8.43	5.94
.06	.142	.118	.0133	.0110	.128	.106	.212					5.07	3.83	5.40	5.19	5.08	3.84
.08	.135	.118	.0158	.0138	.119	.104	.128					2.25	1.83	2.49	2.37	2.26	1.85
.1	.128	.115	.0177	.0160	.110	.0996	.0843					1.19	1.01	1.39	1.30	1.21	1.03
.15	.115	.109	.0209	.0198	.0945	.0894	.0396					.374	.337	.522	.483	.395	.357
.2	.106	.102	.0229	.0220	.0832	.0798	.0229					.162	.151	.287	.264	.185	.173
.3	.0923	.0900	.0248	.0243	.0674	.0657	.0104					.0509	.0484	.151	.141	.0758	.0724
.4	.0826	.0815	.0255	.0251	.0572	.0564	.00589					.0238	.0229	.111	.105	.0493	.0481
.5	.0753	.0747	.0257	.0254	.0496	.0493	.00383					.0134	.0130	.0917	.0883	.0391	.0384
.6	.0696	.0691	.0256	.0252	.0440	.0439	.00264					.00849	.00826	.0804	.0775	.0341	.0335
.8	.0611	.0611	.0250	.0246	.0362	.0366	.00149					.00436	.00428	.0668	.0657	.0294	.0289
1.	.0550	.0548	.0242	.0235	.0308	.0313	.000962					.00269	.00265	.0583	.0577	.0269	.0261
1.5	.0447	.0446	.0221	.0215	.0226	.0231	.000433	.000679		.000679	.000208	.00125	.00124	.0470	.0465	.0240	.0229
2.	.0381	.0380	.0202	.0194	.0179	.0186	.000246	.00242		.00242	.00112	.000787	.000781	.0415	.0413	.0234	.0213
3.	.0299	.0299	.0173	.0162	.0127	.0138	.000109	.00640	.0000105	.00640	.00397	.000424	.000422	.0368	.0367	.0241	.0206
4.	.0251	.0251	.0152	.0140	.00985	.0111	.0000623	.0102	.0000430	.0102	.00702	.000279	.000278	.0357	.0356	.0258	.0213
5.	.0216	.0216	.0136	.0122	.00804	.00945	.0000402	.0135	.0000849	.0135	.00985	.000208	.000208	.0354	.0354	.0273	.0222
6.	.0191	.0191	.0123	.0108	.00679	.00838	.0000275	.0160	.0000131	.0161	.0121	.000164	.000164	.0354	.0354	.0286	.0230
8.	.0156	.0156	.0104	.00877	.00521	.00685	.0000151	.0201	.0000222	.0204	.0156	.000114	.000114	.0361	.0361	.0309	.0245
10.	.0133	.0133	.00911	.00724	.00422	.00606	.0000098	.0238	.0000305	.0241	.0186	.0000889	.0000889	.0375	.0375	.0333	.0259
15.	.00985	.00985	.00702	.00525	.00286	.00460		.0311	.0000478	.0316	.0235	.0000564	.0000564	.0415	.0415	.0387	.0289
20.	.00792	.00792	.00577	.00405	.00216	.00388		.0362	.0000606	.0368	.0259	.0000413	.0000412	.0448	.0448	.0427	.0299
30.	.00577	.00577	.00430	.00264	.00145	.00313		.0431	.0000792	.0439	.0282	.0000268	.0000268	.0496	.0496	.0482	.0308
40.	.00458	.00458	.00348	.00186	.00110	.00272		.0481	.0000928	.0490	.0288	.0000198	.0000198	.0536	.0536	.0525	.0307
50.	.00382	.00382	.00294	.00141	.000877	.00241		.0518	.00103	.0528	.0286	.0000156	.0000156	.0566	.0566	.0558	.0300
60.	.00329	.00329	.00255	.00110	.000736	.00218		.0546	.00111	.0556	.0283	.0000128	.0000128	.0589	.0589	.0583	.0294
80.	.00260	.00260	.00204	.000747	.000554	.00185		.0583	.00123	.0594	.0276	.0000095	.0000095	.0623	.0623	.0617	.0283
100.	.00216	.00216	.00171	.000543	.000444	.00161		.0623	.00132	.0634	.0270	.0000074	.0000074	.0657	.0657	.0651	.0276

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(barns/atom)

E (MeV)	KN $\sigma_{inc,t}$	BD $\sigma_{inc,t}$	KN $\sigma_{inc,a}$	BD $\sigma_{inc,a}$	KN $\sigma_{inc,s}$	BD $\sigma_{inc,s}$	σ_{coh}	$\sigma_{\kappa n}$	$\sigma_{\kappa e}$	$\sigma_{\kappa,t}$	$\sigma_{\kappa,a}$	$\sigma_{\gamma,t}$	$\sigma_{\gamma,a}$	$\sigma_{tot,t}$	$\sigma_{tot,t-coh}$	$\sigma_{tot,a}$	$\sigma_{tot,en}$
.001	31.1	.893	.0607	.00174	31.1	.891	1400.					1700000.	1700000.	1700000.	1700000.	1700000.	1700000.
.0015	31.1	1.64	.0907	.00478	31.0	1.64	1340.					585000.	585000.	586000.	585000.	585000.	585000.
.002	31.0	2.42	.120	.00939	30.9	2.41	1260.					275000.	275000.	276000.	275000.	275000.	275000.
.003	30.9	3.89	.179	.0225	30.7	3.87	1110.					93900.	93900.	95000.	93900.	93900.	93900.
L_{III} .003351	30.9	4.38	.199	.0283	30.7	4.35	1050.					69800.	69800.	70900.	69800.	69800.	69800.
												270000.	246000.	271000.	270000.	270000.	246000.
L_{II} .003524	30.8	4.62	.209	.0314	30.6	4.59	1030.					225000.	206000.	226000.	225000.	225000.	206000.
												311000.	284000.	312000.	311000.	311000.	284000.
L_{I} .003806	30.8	5.00	.226	.0366	30.6	4.96	988.					259000.	239000.	260000.	259000.	259000.	239000.
												296000.	272000.	297000.	296000.	296000.	272000.
.004	30.8	5.26	.237	.0405	30.5	5.22	961.					256000.	237000.	257000.	256000.	256000.	237000.
.005	30.7	6.51	.294	.0624	30.4	6.45	833.					139000.	131000.	140000.	139000.	139000.	131000.
.006	30.5	7.67	.350	.0878	30.2	7.58	727.					85300.	81000.	86000.	85300.	85300.	81000.
.008	30.3	9.77	.459	.148	29.9	9.62	570.					38700.	37200.	39300.	38700.	38700.	37200.
.01	30.1	11.5	.564	.216	29.5	11.3	464.					20700.	20100.	21200.	20700.	20700.	20100.
.015	29.6	14.6	.817	.404	28.7	14.2	303.					6730.	6590.	7050.	6740.	6730.	6590.
.02	29.0	16.6	1.05	.599	28.0	16.0	210.					2980.	2930.	3210.	3000.	2980.	2930.
K .025514	28.5	18.1	1.28	.815	27.2	17.3	149.					1500.	1480.	1670.	1520.	1500.	1480.
												10100.	3920.	10300.	10100.	10100.	3920.
.03	28.1	19.0	1.46	.989	26.6	18.0	117.					6500.	3120.	6640.	6520.	6500.	3120.
.04	27.2	20.3	1.81	1.35	25.4	18.9	76.3					2960.	1800.	3060.	2980.	2960.	1800.
.05	26.4	20.9	2.13	1.69	24.3	19.2	53.6					1600.	1100.	1670.	1620.	1600.	1100.
.06	25.6	21.2	2.41	1.99	23.2	19.2	39.6					970.	718.	1030.	991.	972.	720.
.08	24.3	21.2	2.85	2.48	21.5	18.7	23.8					431.	347.	476.	452.	434.	349.
.1	23.2	20.9	3.20	2.88	20.0	18.0	15.8					229.	193.	266.	250.	232.	196.
.15	20.8	19.7	3.78	3.58	17.1	16.1	7.40					72.1	64.6	99.2	91.8	75.9	68.2
.2	19.1	18.4	4.13	3.98	15.0	14.4	4.27					31.5	29.0	54.2	49.9	35.6	33.0
.3	16.6	16.3	4.48	4.39	12.1	11.9	1.94					9.90	9.38	28.1	26.2	14.4	13.8
.4	14.9	14.7	4.61	4.53	10.3	10.2	1.10					4.61	4.43	20.4	19.3	9.22	8.96
.5	13.6	13.5	4.64	4.59	8.95	8.91	.715					2.60	2.52	16.8	16.1	7.24	7.11
.6	12.6	12.5	4.62	4.56	7.95	7.94	.493					1.65	1.61	14.6	14.1	6.27	6.17
.8	11.0	11.0	4.51	4.42	6.53	6.58	.278					.850	.833	12.1	11.8	5.36	5.25
1.	9.93	9.89	4.37	4.23	5.56	5.66	.180					.525	.517	10.6	10.4	4.89	4.75
1.5	8.07	8.05	3.99	3.87	4.07	4.18	.0806	.126		.126	.0386	.245	.242	8.50	8.42	4.36	4.15
2.	6.88	6.87	3.65	3.50	3.23	3.37	.0459	.449		.449	.208	.153	.152	7.52	7.47	4.25	3.86
3.	5.41	5.40	3.12	2.91	2.29	2.49	.0204	1.18	.00189	1.18	.730	.0828	.0824	6.68	6.66	4.38	3.72
4.	4.52	4.52	2.74	2.52	1.78	2.00	.0116	1.88	.00778	1.89	1.30	.0545	.0543	6.48	6.46	4.68	3.87
5.	3.90	3.90	2.45	2.19	1.45	1.71	.00754	2.48	.0153	2.50	1.81	.0400	.0399	6.45	6.44	4.99	4.04
6.	3.45	3.45	2.22	1.94	1.23	1.51	.00516	2.94	.0237	2.96	2.21	.0321	.0320	6.45	6.44	5.21	4.18
8.	2.82	2.82	1.88	1.58	.940	1.24	.00281	3.71	.0401	3.75	2.86	.0223	.0223	6.60	6.59	5.65	4.46
10.	2.40	2.40	1.64	1.31	.761	1.09	.00181	4.40	.0550	4.45	3.43	.0173	.0173	6.87	6.87	6.11	4.76
15.	1.78	1.78	1.26	.945	.516	.835		5.70	.0861	5.79	4.30	.0109	.0109	7.58	7.58	7.06	5.26
20.	1.43	1.43	1.04	.728	.391	.702		6.62	.109	6.73	4.69	.00798	.00797	8.17	8.17	7.78	5.43
30.	1.04	1.04	.777	.472	.263	.568		7.95	.143	8.09	5.17	.00519	.00519	9.14	9.14	8.87	5.65
40.	.826	.826	.628	.334	.198	.492		8.82	.168	8.99	5.24	.00382	.00382	9.82	9.82	9.62	5.58
50.	.690	.690	.531	.254	.159	.436		9.55	.185	9.73	5.24	.00300	.00300	10.4	10.4	10.3	5.50
60.	.594	.594	.461	.198	.133	.396		10.1	.200	10.3	5.19	.00248	.00248	10.9	10.9	10.8	5.39
80.	.469	.469	.369	.135	.100	.334		10.8	.222	11.0	5.06	.00183	.00183	11.5	11.5	11.4	5.20
100.	.389	.389	.309	.0976	.0802	.291		11.4	.238	11.6	4.91	.00144	.00144	12.0	12.0	11.9	5.01

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(cm^2/g = 0.005583 x barns/atom)

E (MeV)	$(\frac{\mu}{\rho})^{KN}_{inc,t}$	$(\frac{\mu}{\rho})^{BD}_{inc,t}$	$(\frac{\mu}{\rho})^{KN}_{inc,a}$	$(\frac{\mu}{\rho})^{BD}_{inc,a}$	$(\frac{\mu}{\rho})^{KN}_{inc,s}$	$(\frac{\mu}{\rho})^{BD}_{inc,s}$	$(\frac{\mu}{\rho})_{coh}$	$(\frac{\mu}{\rho})_{\kappa n}$	$(\frac{\mu}{\rho})_{\kappa e}$	$(\frac{\mu}{\rho})_{\kappa,t}$	$(\frac{\mu}{\rho})_{\kappa,a}$	$(\frac{\mu}{\rho})_{\tau,t}$	$(\frac{\mu}{\rho})_{\tau,a}$	$(\frac{\mu}{\rho})_{tot,t}$	$(\frac{\mu}{\rho})_{tot,t-coh}$	$(\frac{\mu}{\rho})_{tot,a}$	$(\frac{\mu}{\rho})_{tot,en}$
												9490.	9490.	9490.	9490.	9490.	9490.
.001	.174	.00499	.000339	.0000097	.174	.00497	7.82					3270.	3270.	3270.	3270.	3270.	3270.
.0015	.174	.00916	.000506	.0000267	.173	.00916	7.48					1540.	1540.	1540.	1540.	1540.	1540.
.002	.173	.0135	.000670	.0000524	.173	.0135	7.03					524.	524.	530.	524.	524.	524.
.003	.173	.0217	.000999	.000126	.171	.0216	6.20					390.	390.	396.	390.	390.	390.
L_{III} .003351	.173	.0245	.00111	.000158	.171	.0243	5.86					1510.	1370.	1510.	1510.	1510.	1370.
L_{II} .003524	.172	.0258	.00117	.000175	.171	.0256	5.75					1260.	1150.	1260.	1260.	1260.	1150.
L_{I} .003806	.172	.0279	.00126	.000204	.171	.0277	5.52					1740.	1590.	1740.	1740.	1740.	1590.
												1450.	1330.	1450.	1450.	1450.	1330.
.004	.172	.0294	.00132	.000226	.170	.0291	5.37					1650.	1520.	1660.	1650.	1650.	1520.
.005	.171	.0363	.00164	.000348	.170	.0360	4.65					1430.	1320.	1430.	1430.	1430.	1320.
.006	.170	.0428	.00195	.000490	.169	.0423	4.06					776.	731.	782.	776.	776.	731.
.008	.169	.0545	.00256	.000826	.167	.0537	3.18					476.	452.	480.	476.	476.	452.
.01	.168	.0642	.00315	.00121	.165	.0631	2.59					216.	208.	219.	216.	216.	208.
.015	.165	.0815	.00456	.00226	.160	.0793	1.69					116.	112.	118.	116.	116.	112.
.02	.162	.0927	.00586	.00334	.156	.0893	1.17					37.6	36.8	39.4	37.6	37.6	36.8
K .025514	.159	.101	.00715	.00455	.152	.0966	.832					16.6	16.4	17.9	16.7	16.6	16.4
												8.37	8.26	9.32	8.49	8.37	8.26
.03	.157	.106	.00815	.00552	.149	.100	.653					56.4	21.9	57.5	56.4	56.4	21.9
.04	.152	.113	.0101	.00754	.142	.106	.426					36.3	17.4	37.1	36.4	36.3	17.4
.05	.147	.117	.0119	.00944	.136	.107	.299					16.5	10.0	17.1	16.6	16.5	10.0
.06	.143	.118	.0135	.0111	.130	.107	.221					8.93	6.14	9.32	9.04	8.93	6.14
.08	.136	.118	.0159	.0138	.120	.104	.133					5.42	4.01	5.75	5.53	5.43	4.02
.1	.130	.117	.0179	.0161	.112	.100	.0882					2.41	1.94	2.66	2.52	2.42	1.95
.15	.116	.110	.0211	.0200	.0955	.0899	.0413					1.28	1.08	1.49	1.40	1.30	1.09
.2	.107	.103	.0231	.0222	.0837	.0804	.0238					.403	.361	.554	.513	.424	.381
.3	.0927	.0910	.0250	.0245	.0676	.0664	.0108					.176	.162	.303	.279	.199	.184
.4	.0832	.0821	.0257	.0253	.0575	.0569	.00614					.0553	.0524	.157	.146	.0804	.0770
.5	.0759	.0754	.0259	.0256	.0500	.0497	.00399					.0257	.0247	.114	.108	.0515	.0500
.6	.0703	.0698	.0258	.0255	.0444	.0443	.00275					.0145	.0141	.0938	.0899	.0404	.0397
.8	.0614	.0614	.0252	.0247	.0365	.0367	.00155					.00921	.00899	.0815	.0787	.0350	.0344
1.	.0554	.0552	.0244	.0236	.0310	.0316	.00100					.00675	.00665	.0676	.0659	.0299	.0293
1.5	.0451	.0449	.0223	.0216	.0227	.0233	.000450	.000703		.000703	.000216	.00293	.00289	.0592	.0581	.0273	.0265
2.	.0384	.0384	.0204	.0195	.0180	.0188	.000256	.00251		.00251	.00116	.00137	.00135	.0475	.0470	.0243	.0232
3.	.0302	.0301	.0174	.0162	.0128	.0139	.000114	.00659	.0000106	.00659	.00408	.000854	.000849	.0420	.0417	.0237	.0216
4.	.0252	.0252	.0153	.0141	.00994	.0112	.0000648	.0105	.0000434	.0106	.00726	.000462	.000460	.0373	.0372	.0245	.0208
5.	.0218	.0218	.0137	.0122	.00810	.00955	.0000421	.0138	.0000854	.0140	.0101	.000304	.000303	.0362	.0361	.0261	.0216
6.	.0193	.0193	.0124	.0108	.00687	.00843	.0000288	.0164	.000132	.0165	.0123	.000223	.000223	.0360	.0360	.0279	.0226
8.	.0157	.0157	.0105	.00882	.00525	.00692	.0000157	.0207	.000224	.0209	.0160	.000179	.000179	.0368	.0368	.0315	.0249
10.	.0134	.0134	.00916	.00731	.00425	.00609	.0000101	.0246	.000307	.0248	.0191	.000125	.000125	.0384	.0384	.0341	.0269
15.	.00994	.00994	.00703	.00528	.00288	.00466		.0318	.000481	.0323	.0240	.0000966	.0000966	.0423	.0423	.0384	.0294
20.	.00798	.00798	.00581	.00406	.00218	.00392		.0370	.000609	.0376	.0262	.0000609	.0000609	.0456	.0456	.0434	.0303
30.	.00581	.00581	.00434	.00264	.00147	.00317		.0444	.000798	.0452	.0289	.0000446	.0000445	.0510	.0510	.0495	.0315
40.	.00461	.00461	.00351	.00186	.00111	.00275		.0492	.000938	.0502	.0293	.0000290	.0000290	.0548	.0548	.0537	.0312
50.	.00385	.00385	.00296	.00142	.000888	.00243		.0533	.00103	.0543	.0293	.0000213	.0000213	.0581	.0581	.0575	.0307
60.	.00332	.00332	.00257	.00111	.000743	.00221		.0564	.00112	.0575	.0290	.0000167	.0000167	.0609	.0609	.0603	.0301
80.	.00262	.00262	.00206	.000754	.000558	.00186		.0603	.00124	.0614	.0282	.0000138	.0000138	.0642	.0642	.0636	.0290
100.	.00217	.00217	.00173	.000545	.000448	.00162		.0636	.00133	.0648	.0274	.0000102	.0000102	.0670	.0670	.0664	.0280
												.0000080	.0000080				

48 CADMIUM
(barns/atom)

E (MeV)	KN $\sigma_{inc,t}$	BD $\sigma_{inc,t}$	KN $\sigma_{inc,a}$	BD $\sigma_{inc,a}$	KN $\sigma_{inc,s}$	BD $\sigma_{inc,s}$	σ_{coh}	$\sigma_{\gamma n}$	$\sigma_{\gamma e}$	$\sigma_{\gamma,t}$	$\sigma_{\gamma,a}$	$\sigma_{r,t}$	$\sigma_{r,a}$	$\sigma_{tot,t}$	$\sigma_{tot,t-coh}$	$\sigma_{tot,a}$	$\sigma_{tot,en}$
.001	31.8	1.00	.0620	.00195	31.7	.998	1460.					1870000.	1870000.	1870000.	1870000.	1870000.	1870000.
.0015	31.7	1.80	.0926	.00525	31.7	1.79	1390.					642000.	642000.	643000.	642000.	642000.	642000.
.002	31.7	2.59	.123	.0100	31.6	2.58	1310.					302000.	302000.	303000.	302000.	302000.	302000.
.003	31.6	4.05	.183	.0235	31.4	4.03	1150.					103000.	103000.	104000.	103000.	103000.	103000.
L_{III} .003537	31.5	4.79	.215	.0327	31.3	4.76	1070.					66400.	66400.	67500.	66400.	66400.	66400.
L_{II} .003727	31.5	5.04	.226	.0362	31.2	5.00	1040.					252000.	229000.	253000.	252000.	252000.	229000.
												210000.	192000.	211000.	210000.	210000.	192000.
.004	31.4	5.41	.242	.0416	31.2	5.37	1000.					290000.	264000.	291000.	290000.	290000.	264000.
L_{I} .004018	31.4	5.43	.243	.0420	31.2	5.39	999.					244000.	224000.	245000.	244000.	244000.	224000.
												242000.	222000.	243000.	242000.	242000.	222000.
.005	31.3	6.66	.300	.0638	31.0	6.60	870.					277000.	254000.	278000.	277000.	277000.	254000.
.006	31.2	7.82	.357	.0895	30.8	7.73	760.					151000.	141000.	152000.	151000.	151000.	141000.
.008	31.0	9.91	.469	.150	30.5	9.76	596.					92600.	87400.	93400.	92600.	92600.	87400.
.01	30.7	11.7	.576	.219	30.2	11.5	485.					42100.	40300.	42700.	42100.	42100.	40300.
.015	30.2	14.8	.835	.409	29.4	14.4	317.					22600.	21800.	23100.	22600.	22600.	21800.
.02	29.7	16.9	1.07	.610	28.6	16.3	220.					7370.	7200.	7700.	7380.	7370.	7200.
K .026711	29.0	18.7	1.36	.877	27.6	17.8	146.					3270.	3210.	3510.	3290.	3270.	3210.
												1450.	1430.	1610.	1470.	1450.	1430.
.03	28.7	19.3	1.49	1.00	27.2	18.3	123.					9530.	3660.	9740.	9600.	9580.	3660.
.04	27.8	20.6	1.85	1.37	25.9	19.2	80.2					7000.	3150.	7140.	7020.	7000.	3150.
.05	26.9	21.3	2.17	1.72	24.8	19.6	56.4					3200.	1880.	3300.	3220.	3200.	1880.
.06	26.2	21.6	2.46	2.03	23.7	19.6	41.7					1740.	1170.	1820.	1760.	1740.	1170.
.08	24.8	21.6	2.91	2.53	21.9	19.1	25.1					1050.	761.	1110.	1070.	1050.	763.
.1	23.6	21.3	3.26	2.94	20.4	18.4	16.6					467.	371.	514.	489.	470.	374.
.15	21.3	20.1	3.88	3.65	17.4	16.5	7.81					248.	207.	286.	269.	251.	210.
.2	19.5	18.8	4.22	4.06	15.3	14.7	4.51					78.5	69.9	106.	98.6	82.4	73.5
.3	17.0	16.6	4.57	4.48	12.4	12.1	2.05					34.3	31.5	57.6	53.1	38.5	35.6
.4	15.2	15.0	4.71	4.62	10.5	10.4	1.16					10.8	10.2	29.4	27.4	15.4	14.7
.5	13.9	13.7	4.73	4.66	9.14	9.04	.754					5.10	4.89	21.3	20.1	9.81	9.51
.6	12.8	12.7	4.72	4.64	8.12	8.06	.520					2.84	2.75	17.3	16.5	7.57	7.41
.8	11.3	11.2	4.61	4.50	6.67	6.70	.293					1.80	1.75	15.0	14.5	6.52	6.39
1.	10.1	10.1	4.46	4.32	5.68	5.78	.190					.930	.911	12.4	12.1	5.54	5.41
1.5	8.24	8.22	4.07	3.95	4.16	4.27	.0851	.133		.133	.0407	.578	.568	10.9	10.7	5.04	4.89
2.	7.02	7.01	3.73	3.57	3.30	3.44	.0483	.470		.470	.218	.269	.266	8.71	8.62	4.47	4.26
3.	5.52	5.52	3.19	2.97	2.34	2.55	.0216	1.23	.00193	1.23	.761	.168	.167	7.70	7.65	4.37	3.95
4.	4.62	4.62	2.80	2.57	1.82	2.05	.0123	1.96	.00793	1.97	1.35	.0903	.0848	6.86	6.84	4.51	3.82
5.	3.99	3.99	2.50	2.23	1.48	1.76	.00797	2.58	.0156	2.60	1.88	.0594	.0592	6.66	6.65	4.83	3.98
6.	3.52	3.52	2.27	1.97	1.25	1.55	.00548	3.07	.0242	3.09	2.31	.0441	.0440	6.64	6.63	5.14	4.15
8.	2.88	2.88	1.92	1.61	.960	1.27	.00297	3.87	.0410	3.91	2.98	.0350	.0349	6.65	6.64	5.39	4.31
10.	2.46	2.46	1.68	1.33	.777	1.13	.00190	4.59	.0561	4.65	3.56	.0243	.0242	6.82	6.81	5.85	4.61
15.	1.82	1.82	1.29	.963	.527	.857		5.95	.0880	6.04	4.48	.0189	.0189	7.13	7.13	6.35	4.91
20.	1.46	1.46	1.06	.737	.399	.723		6.90	.111	7.01	4.87	.0119	.0119	7.87	7.87	7.34	5.45
30.	1.06	1.06	.793	.479	.268	.581		8.30	.145	8.44	5.38	.00870	.00869	8.48	8.48	8.08	5.62
40.	.844	.844	.641	.338	.203	.506		9.20	.171	9.37	5.43	.00568	.00568	9.51	9.51	9.24	5.86
50.	.705	.705	.542	.257	.162	.448		9.89	.189	10.1	5.39	.00418	.00418	10.2	10.2	10.0	5.77
60.	.607	.607	.471	.201	.136	.406		10.4	.204	10.6	5.31	.00330	.00330	10.8	10.8	10.6	5.65
80.	.479	.479	.376	.137	.102	.342		11.2	.226	11.4	5.20	.00270	.00270	11.2	11.2	11.1	5.51
100.	.397	.397	.316	.0992	.0819	.298		11.8	.242	12.0	5.03	.00200	.00200	11.9	11.9	11.8	5.34
												.00157	.00157	12.4	12.4	12.3	5.13

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(cm²/g = 0.005358 x barns/atom)

E (MeV)	$(\frac{\mu}{\rho})^{KN}_{inc,t}$	$(\frac{\mu}{\rho})^{BD}_{inc,t}$	$(\frac{\mu}{\rho})^{KN}_{inc,a}$	$(\frac{\mu}{\rho})^{BD}_{inc,a}$	$(\frac{\mu}{\rho})^{KN}_{inc,s}$	$(\frac{\mu}{\rho})^{BD}_{inc,s}$	$(\frac{\mu}{\rho})_{coh}$	$(\frac{\mu}{\rho})_{\kappa n}$	$(\frac{\mu}{\rho})_{\kappa e}$	$(\frac{\mu}{\rho})_{\kappa,t}$	$(\frac{\mu}{\rho})_{\kappa,a}$	$(\frac{\mu}{\rho})_{\tau,t}$	$(\frac{\mu}{\rho})_{\tau,a}$	$(\frac{\mu}{\rho})_{tot,t}$	$(\frac{\mu}{\rho})_{tot,t-coh}$	$(\frac{\mu}{\rho})_{tot,a}$	$(\frac{\mu}{\rho})_{tot,en}$
.001	.170	.00536	.000332	.0000104	.170	.00535	7.82					10000.	10000.	10000.	10000.	10000.	10000.
.0015	.170	.00964	.000496	.0000281	.170	.00959	7.45					3440.	3440.	3450.	3440.	3440.	3440.
.002	.170	.0139	.000659	.0000536	.169	.0138	7.02					1620.	1620.	1620.	1620.	1620.	1620.
.003	.169	.0217	.000981	.000126	.168	.0216	6.16					552.	552.	557.	552.	552.	552.
L_{III} .003537	.169	.0257	.00115	.000175	.168	.0255	5.73					356.	356.	362.	356.	356.	356.
L_{II} .003727	.169	.0270	.00121	.000194	.167	.0268	5.57					1350.	1230.	1360.	1350.	1350.	1230.
.004	.168	.0290	.00130	.000223	.167	.0288	5.36					1130.	1030.	1130.	1130.	1130.	1030.
L_I .004018	.168	.0291	.00130	.000225	.167	.0289	5.35					1550.	1410.	1560.	1550.	1550.	1410.
.005	.168	.0357	.00161	.000342	.166	.0354	4.66					1310.	1200.	1310.	1310.	1310.	1200.
.006	.167	.0419	.00191	.000480	.165	.0414	4.07					1300.	1190.	1300.	1300.	1300.	1190.
.008	.166	.0531	.00251	.000804	.163	.0523	3.19					1480.	1360.	1490.	1480.	1480.	1360.
.01	.164	.0627	.00309	.00117	.162	.0616	2.60					809.	755.	814.	809.	809.	755.
.015	.162	.0793	.00447	.00219	.158	.0772	1.70					496.	468.	500.	496.	496.	468.
.02	.159	.0906	.00573	.00327	.153	.0873	1.18					226.	216.	229.	226.	226.	216.
K .026711	.155	.100	.00729	.00470	.148	.0954	.782					121.	117.	124.	121.	121.	117.
.03	.154	.103	.00798	.00536	.146	.0981	.659					39.5	38.6	41.3	39.5	39.5	38.6
.04	.149	.110	.00991	.00734	.139	.103	.430					17.5	17.2	18.8	17.6	17.5	17.2
.05	.144	.114	.0116	.00922	.133	.105	.302					7.77	7.66	8.63	7.88	7.77	7.66
.06	.140	.116	.0132	.0109	.127	.105	.223					51.3	19.6	52.2	51.4	51.3	19.6
.08	.133	.116	.0156	.0136	.117	.102	.134					37.5	16.9	38.3	37.6	37.5	16.9
.1	.126	.114	.0175	.0158	.109	.0986	.0889					17.1	10.1	17.7	17.3	17.1	10.1
.15	.114	.108	.0207	.0196	.0932	.0884	.0418					9.32	6.27	9.75	9.43	9.32	6.27
.2	.104	.101	.0226	.0218	.0820	.0788	.0242					5.63	4.08	5.95	5.73	5.63	4.09
.3	.0911	.0889	.0245	.0240	.0664	.0648	.0110					2.50	1.99	2.75	2.62	2.52	2.00
.4	.0814	.0804	.0252	.0248	.0563	.0557	.00622					1.33	1.11	1.53	1.44	1.34	1.13
.5	.0745	.0734	.0253	.0250	.0490	.0484	.00404					.421	.375	.568	.528	.441	.394
.6	.0686	.0680	.0253	.0249	.0435	.0432	.00279					.184	.169	.309	.285	.206	.191
.8	.0605	.0600	.0247	.0241	.0357	.0359	.00157					.0579	.0547	.158	.147	.0825	.0788
1.	.0541	.0541	.0239	.0231	.0304	.0310	.00102					.0273	.0262	.114	.108	.0526	.0510
1.5	.0441	.0440	.0218	.0212	.0223	.0229	.000456	.000713		.000713	.000218	.0152	.0147	.0927	.0884	.0406	.0397
2.	.0376	.0376	.0200	.0191	.0177	.0184	.000259	.00252		.00252	.00117	.00964	.00938	.0804	.0777	.0349	.0342
3.	.0296	.0296	.0171	.0159	.0125	.0137	.000116	.00659	.0000103	.00659	.00408	.00498	.00488	.0644	.0648	.0297	.0290
4.	.0248	.0248	.0150	.0138	.00975	.0110	.0000659	.0105	.0000425	.0106	.00723	.00310	.00304	.0584	.0573	.0270	.0262
5.	.0214	.0214	.0134	.0119	.00793	.00943	.0000427	.0138	.0000836	.0139	.0101	.00144	.00143	.0467	.0462	.0240	.0228
6.	.0189	.0189	.0122	.0106	.00670	.00830	.0000294	.0164	.000130	.0166	.0124	.000900	.000895	.0413	.0410	.0234	.0212
8.	.0154	.0154	.0103	.00863	.00514	.00680	.0000159	.0207	.000220	.0209	.0160	.000484	.000481	.0368	.0366	.0242	.0205
10.	.0132	.0132	.00900	.00713	.00416	.00605	.0000102	.0246	.000301	.0249	.0191	.000318	.000317	.0357	.0356	.0259	.0213
15.	.00975	.00975	.00691	.00516	.00282	.00459		.0319	.000472	.0324	.0240	.000236	.000236	.0356	.0355	.0275	.0222
20.	.00782	.00782	.00568	.00395	.00214	.00387		.0370	.000595	.0376	.0261	.000188	.000187	.0356	.0356	.0289	.0231
30.	.00568	.00568	.00425	.00257	.00144	.00311		.0445	.000777	.0452	.0288	.000130	.000130	.0365	.0365	.0313	.0247
40.	.00452	.00452	.00343	.00181	.00109	.00271		.0493	.000916	.0502	.0291	.000101	.000101	.0382	.0382	.0340	.0263
50.	.00378	.00378	.00290	.00138	.000868	.00240		.0530	.00101	.0541	.0289	.0000638	.0000638	.0422	.0422	.0393	.0292
60.	.00325	.00325	.00252	.00108	.000729	.00218		.0557	.00109	.0568	.0285	.0000466	.0000466	.0454	.0454	.0433	.0301
80.	.00257	.00257	.00201	.000734	.000547	.00183		.0600	.00121	.0611	.0279	.0000304	.0000304	.0510	.0510	.0495	.0314
100.	.00213	.00213	.00169	.000532	.000439	.00160		.0632	.00130	.0643	.0270	.0000224	.0000224	.0547	.0547	.0536	.0309
												.0000177	.0000177	.0579	.0579	.0568	.0303
												.0000145	.0000145	.0600	.0600	.0595	.0295
												.0000107	.0000107	.0638	.0638	.0632	.0286
												.0000084	.0000084	.0664	.0664	.0659	.0275

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(barns/atom)

E (MeV)	$\sigma^{KN}_{inc,t}$	$\sigma^{BD}_{inc,t}$	$\sigma^{KN}_{inc,a}$	$\sigma^{BD}_{inc,a}$	$\sigma^{KN}_{inc,s}$	$\sigma^{BD}_{inc,s}$	σ_{coh}	$\sigma_{\kappa n}$	$\sigma_{\kappa e}$	$\sigma_{\kappa,t}$	$\sigma_{\kappa,a}$	$\sigma_{\gamma,t}$	$\sigma_{\gamma,a}$	$\sigma_{tot,t}$	$\sigma_{tot,t-coh}$	$\sigma_{tot,a}$	$\sigma_{tot,en}$
.001	32.5	1.05	.0633	.00205	32.4	1.05	1510.					2040000.	2040000.	2040000.	2040000.	2040000.	2040000.
.0015	32.4	1.92	.0945	.00560	32.3	1.91	1440.					699000.	699000.	700000.	699000.	699000.	699000.
.002	32.3	2.75	.125	.0107	32.2	2.74	1360.					328000.	328000.	329000.	328000.	328000.	328000.
.003	32.2	4.22	.187	.0245	32.0	4.20	1190.					112000.	112000.	113000.	112000.	112000.	112000.
L_{III} .003730	32.1	5.22	.231	.0375	31.9	5.18	1080.					63200.	63200.	64300.	63200.	63200.	63200.
L_{II} .003938	32.1	5.50	.243	.0417	31.9	5.46	1050.					237000.	214000.	238000.	237000.	237000.	214000.
.004	32.1	5.58	.247	.0429	31.8	5.54	1040.					196000.	178000.	197000.	196000.	196000.	178000.
L_{I} .004238	32.1	5.88	.261	.0479	31.8	5.83	1010.					271000.	245000.	272000.	271000.	271000.	245000.
.005	32.0	6.82	.306	.0653	31.7	6.75	906.					261000.	237000.	262000.	261000.	261000.	237000.
.006	31.8	7.96	.365	.0911	31.5	7.87	793.					227000.	207000.	228000.	227000.	227000.	207000.
.008	31.6	10.1	.478	.153	31.1	9.95	622.					260000.	237000.	261000.	260000.	260000.	237000.
.01	31.4	11.8	.588	.221	30.8	11.6	505.					164000.	152000.	165000.	164000.	164000.	152000.
.015	30.8	15.0	.852	.415	30.0	14.6	331.					100000.	93800.	101000.	100000.	100000.	93800.
.02	30.3	17.2	1.09	.621	29.2	16.6	231.					45800.	43700.	46400.	45800.	45800.	43700.
K .027940	29.5	19.3	1.44	.943	28.0	18.4	144.					24600.	23700.	25100.	24600.	24600.	23700.
.03	29.3	19.7	1.52	1.03	27.8	18.7	130.					8030.	7830.	8380.	8050.	8030.	7830.
.04	28.4	21.0	1.89	1.40	26.5	19.6	84.2					3400.	3530.	3850.	3620.	3600.	3530.
.05	27.5	21.7	2.22	1.75	25.3	19.9	59.3					1390.	1370.	1550.	1410.	1390.	1370.
.06	26.7	22.0	2.51	2.06	24.2	19.9	43.9					9120.	3400.	9280.	9140.	9120.	3400.
.08	25.3	22.0	2.97	2.58	22.4	19.4	26.5					7500.	3120.	7650.	7520.	7500.	3120.
.1	24.1	21.7	3.33	2.99	20.8	18.7	17.5					3420.	1920.	3530.	3440.	3420.	1920.
.15	21.7	20.5	3.94	3.72	17.8	16.8	8.23					1870.	1210.	1950.	1890.	1870.	1210.
.2	19.9	19.1	4.31	4.13	15.6	15.0	4.75					1130.	800.	1200.	1150.	1130.	802.
.3	17.3	16.9	4.67	4.56	12.7	12.3	2.16					506.	395.	555.	528.	509.	398.
.4	15.5	15.3	4.81	4.71	10.7	10.6	1.23					268.	221.	307.	290.	271.	224.
.5	14.2	14.0	4.83	4.75	9.33	9.25	.794					85.0	75.1	114.	106.	88.9	78.8
.6	13.1	13.0	4.82	4.73	8.29	8.27	.549					37.3	34.0	61.1	56.4	41.6	38.1
.8	11.5	11.5	4.71	4.61	6.81	6.89	.310					11.8	11.1	30.9	28.7	16.5	15.7
1.	10.3	10.3	4.55	4.40	5.80	5.90	.209					5.55	5.31	22.1	20.8	10.4	10.0
1.5	8.41	8.39	4.16	4.03	4.25	4.36	.0895	.140		.140	.0428	3.12	3.01	17.9	17.1	7.95	7.76
2.	7.17	7.16	3.81	3.64	3.36	3.52	.0510	.495		.495	.229	1.99	1.93	15.5	15.0	6.81	6.66
3.	5.64	5.63	3.25	3.03	2.38	2.60	.0228	1.29	.00197	1.29	.798	1.01	.988	12.8	12.5	5.72	5.60
4.	4.71	4.71	2.86	2.61	1.85	2.10	.0129	2.05	.00810	2.06	1.41	.632	.621	11.1	10.9	5.18	5.02
5.	4.07	4.07	2.56	2.28	1.51	1.79	.00842	2.69	.0159	2.71	1.95	.296	.293	8.92	8.83	4.80	4.37
6.	3.60	3.60	2.32	2.01	1.28	1.59	.00580	3.20	.0247	3.22	2.40	.184	.182	7.89	7.84	4.49	4.05
8.	2.94	2.94	1.96	1.64	.980	1.30	.00314	4.01	.0419	4.05	3.08	.0990	.0984	7.04	7.02	4.64	3.93
10.	2.51	2.51	1.71	1.36	.793	1.15	.00199	4.77	.0572	4.83	3.68	.0650	.0647	6.85	6.84	4.98	4.08
15.	1.86	1.86	1.32	.978	.538	.882		6.18	.0898	6.27	4.63	.0482	.0480	6.84	6.83	5.32	4.28
20.	1.49	1.49	1.08	.749	.407	.741		7.20	.113	7.31	5.08	.0385	.0384	6.86	6.86	5.58	4.45
30.	1.08	1.08	.810	.486	.274	.594		8.60	.148	8.75	5.55	.0268	.0267	7.02	7.02	6.04	4.75
40.	.861	.861	.655	.344	.207	.517		9.50	.174	9.67	5.58	.0207	.0207	7.36	7.36	6.56	5.06
50.	.719	.719	.554	.261	.166	.458		10.3	.193	10.5	5.57	.0131	.0131	8.14	8.14	7.60	5.62
60.	.619	.619	.481	.204	.139	.415		10.8	.208	11.0	5.48	.00956	.00955	8.81	8.81	8.40	5.84
80.	.489	.489	.384	.138	.104	.351		11.6	.230	11.8	5.36	.00621	.00621	9.84	9.84	9.57	6.04
100.	.406	.406	.322	.101	.0836	.305		12.3	.247	12.5	5.21	.00457	.00457	10.5	10.5	10.3	5.93
												.00360	.00360	11.2	11.2	11.1	5.83
												.00295	.00295	11.6	11.6	11.5	5.69
												.00218	.00218	12.3	12.3	12.2	5.50
												.00172	.00172	12.9	12.9	12.8	5.31

49 INDIUM

(cm^2/g = 0.005245 x barns/atom)

E (MeV)	$(\frac{\mu}{\rho})^{KN}_{inc,t}$	$(\frac{\mu}{\rho})^{BD}_{inc,t}$	$(\frac{\mu}{\rho})^{KN}_{inc,a}$	$(\frac{\mu}{\rho})^{BD}_{inc,a}$	$(\frac{\mu}{\rho})^{KN}_{inc,s}$	$(\frac{\mu}{\rho})^{BD}_{inc,s}$	$(\frac{\mu}{\rho})_{coh}$	$(\frac{\mu}{\rho})_{\kappa_n}$	$(\frac{\mu}{\rho})_{\kappa_e}$	$(\frac{\mu}{\rho})_{\kappa,t}$	$(\frac{\mu}{\rho})_{\kappa,a}$	$(\frac{\mu}{\rho})_{r,t}$	$(\frac{\mu}{\rho})_{r,a}$	$(\frac{\mu}{\rho})_{tot,t}$	$(\frac{\mu}{\rho})_{tot,t-coh}$	$(\frac{\mu}{\rho})_{tot,a}$	$(\frac{\mu}{\rho})_{tot,en}$
.001	.170	.00551	.000332	.0000108	.170	.00551	7.92					10700.	10700.	10700.	10700.	10700.	10700.
.0015	.170	.0101	.000496	.0000294	.169	.0100	7.55					3670.	3670.	3670.	3670.	3670.	3670.
.002	.169	.0144	.000656	.0000561	.169	.0144	7.13					1720.	1720.	1730.	1720.	1720.	1720.
.003	.169	.0221	.000981	.000129	.168	.0220	6.24					587.	587.	593.	587.	587.	587.
L_{III} .003730	.168	.0274	.00121	.000197	.167	.0272	5.66					331.	331.	337.	331.	331.	331.
												1240.	1120.	1250.	1240.	1240.	1120.
L_{II} .003938	.168	.0288	.00127	.000219	.167	.0286	5.51					1030.	934.	1030.	1030.	1030.	934.
												1420.	1290.	1430.	1420.	1420.	1290.
.004	.168	.0293	.00130	.000225	.167	.0291	5.45					1370.	1240.	1370.	1370.	1370.	1240.
L_{I} .004238	.168	.0308	.00137	.000251	.167	.0306	5.30					1190.	1090.	1200.	1190.	1190.	1090.
												1360.	1240.	1370.	1360.	1360.	1240.
.005	.168	.0358	.00160	.000342	.166	.0354	4.75					860.	797.	865.	860.	860.	797.
.006	.167	.0418	.00191	.000478	.165	.0413	4.16					524.	492.	530.	524.	524.	492.
.008	.166	.0530	.00251	.000802	.163	.0522	3.26					240.	229.	243.	240.	240.	229.
.01	.165	.0619	.00308	.00116	.162	.0608	2.65					129.	124.	132.	129.	129.	124.
.015	.162	.0787	.00447	.00218	.157	.0766	1.74					42.1	41.1	44.0	42.2	42.1	41.1
.02	.159	.0902	.00572	.00326	.153	.0871	1.21					18.9	18.5	20.2	19.0	18.9	18.5
K .027940	.155	.101	.00755	.00495	.147	.0965	.755					7.29	7.19	8.13	7.40	7.29	7.19
												47.8	17.8	48.7	47.9	47.8	17.8
.03	.154	.103	.00797	.00540	.146	.0981	.682					39.3	16.4	40.1	39.4	39.3	16.4
.04	.149	.110	.00991	.00734	.139	.103	.442					17.9	10.1	18.5	18.0	17.9	10.1
.05	.144	.114	.0116	.00918	.133	.104	.311					9.81	6.35	10.2	9.91	9.81	6.35
.06	.140	.115	.0132	.0108	.127	.104	.230					5.93	4.20	6.29	6.03	5.93	4.21
.08	.133	.115	.0156	.0135	.117	.102	.139					2.65	2.07	2.91	2.77	2.67	2.89
.1	.126	.114	.0175	.0157	.109	.0981	.0918					1.41	1.16	1.61	1.52	1.42	1.17
.15	.114	.108	.0207	.0195	.0934	.0881	.0432					.446	.394	.598	.556	.446	.413
.2	.104	.100	.0226	.0217	.0818	.0787	.0249					.196	.178	.320	.296	.218	.200
.3	.0907	.0886	.0245	.0239	.0666	.0645	.0113					.0619	.0582	.162	.151	.0865	.0823
.4	.0813	.0802	.0252	.0247	.0561	.0556	.00645					.0291	.0279	.116	.109	.0545	.0524
.5	.0745	.0734	.0253	.0249	.0489	.0485	.00416					.0164	.0158	.0939	.0897	.0417	.0407
.6	.0687	.0682	.0253	.0248	.0435	.0434	.00288					.0104	.0101	.0813	.0787	.0357	.0349
.8	.0603	.0603	.0247	.0242	.0357	.0361	.00163					.00530	.00518	.0671	.0656	.0300	.0294
1.	.0540	.0540	.0239	.0231	.0304	.0309	.00105					.00331	.00326	.0582	.0572	.0272	.0263
1.5	.0441	.0440	.0218	.0211	.0223	.0229	.000469	.000734		.000734	.000224	.00155	.00154	.0468	.0463	.0241	.0230
2.	.0376	.0376	.0200	.0191	.0176	.0185	.000267	.00260		.00260	.00120	.000965	.000955	.0414	.0411	.0236	.0212
3.	.0296	.0295	.0170	.0159	.0125	.0136	.000120	.00677	.0000103	.00677	.00419	.000519	.000516	.0369	.0368	.0243	.0206
4.	.0247	.0247	.0150	.0137	.00970	.0110	.0000677	.0108	.0000425	.0108	.00740	.000341	.000339	.0359	.0359	.0261	.0214
5.	.0213	.0213	.0134	.0120	.00792	.00939	.0000442	.0141	.0000834	.0142	.0102	.000253	.000252	.0359	.0358	.0279	.0224
6.	.0189	.0189	.0122	.0105	.00671	.00834	.0000304	.0168	.000130	.0169	.0126	.000202	.000201	.0360	.0360	.0293	.0233
8.	.0154	.0154	.0103	.00860	.00514	.00682	.0000165	.0210	.000220	.0212	.0162	.000141	.000140	.0368	.0368	.0317	.0249
10.	.0132	.0132	.00897	.00713	.00416	.00603	.0000104	.0250	.000300	.0253	.0193	.000109	.000109	.0386	.0386	.0344	.0265
15.	.00976	.00976	.00692	.00513	.00282	.00463		.0324	.000471	.0329	.0243	.0000687	.0000687	.0427	.0427	.0399	.0295
20.	.00782	.00782	.00566	.00393	.00213	.00389		.0378	.000593	.0383	.0266	.0000501	.0000501	.0462	.0462	.0441	.0306
30.	.00566	.00566	.00425	.00255	.00144	.00312		.0451	.000776	.0459	.0291	.0000326	.0000326	.0516	.0516	.0502	.0317
40.	.00452	.00452	.00344	.00180	.00109	.00271		.0498	.000913	.0507	.0293	.0000240	.0000240	.0551	.0551	.0548	.0311
50.	.00377	.00377	.00291	.00137	.000871	.00240		.0540	.00101	.0551	.0292	.0000189	.0000189	.0587	.0587	.0582	.0306
60.	.00325	.00325	.00252	.00107	.000729	.00218		.0566	.00109	.0577	.0287	.0000155	.0000155	.0608	.0608	.0603	.0298
80.	.00256	.00256	.00201	.000724	.000545	.00184		.0608	.00121	.0619	.0281	.0000114	.0000114	.0645	.0645	.0644	.0288
100.	.00213	.00213	.00169	.000530	.000438	.00160		.0645	.00130	.0656	.0273	.0000090	.0000090	.0677	.0677	.0671	.0279

50 TIN
(barns/atom)

E (MeV)	KN $\sigma_{inc,t}$	BD $\sigma_{inc,t}$	KN $\sigma_{inc,a}$	BD $\sigma_{inc,a}$	KN $\sigma_{inc,s}$	BD $\sigma_{inc,s}$	σ_{coh}	σ_{x_n}	σ_{x_e}	$\sigma_{x,t}$	$\sigma_{x,a}$	$\sigma_{r,t}$	$\sigma_{r,a}$	$\sigma_{tot,t}$	$\sigma_{tot,t-coh}$	$\sigma_{tot,a}$	$\sigma_{tot,en}$
.001	33.1	1.05	.0645	.00205	33.1	1.05	1570.					2250000.	2250000.	2250000.	2250000.	2250000.	2250000.
.0015	33.1	1.91	.0964	.00557	33.0	1.90	1490.					771000.	771000.	772000.	771000.	771000.	771000.
.002	33.0	2.77	.128	.0107	32.9	2.76	1410.					360000.	360000.	361000.	360000.	360000.	360000.
.003	32.9	4.35	.191	.0252	32.7	4.32	1230.					123000.	123000.	124000.	123000.	123000.	123000.
L_{III} .003929	32.8	5.64	.248	.0426	32.5	5.60	1090.					60300.	60300.	61400.	60300.	60300.	60300.
.004	32.7	5.74	.252	.0442	32.5	5.70	1080.					222000.	199000.	223000.	222000.	222000.	199000.
L_{II} .004156	32.7	5.94	.262	.0475	32.5	5.89	1060.					209000.	188000.	210000.	209000.	209000.	188000.
L_{I} .004465	32.7	6.34	.280	.0544	32.4	6.29	1010.					183000.	165000.	184000.	183000.	183000.	165000.
.005	32.6	7.00	.312	.0671	32.3	6.93	942.					253000.	228000.	254000.	253000.	253000.	228000.
.006	32.5	8.16	.372	.0934	32.1	8.07	826.					213000.	193000.	214000.	213000.	213000.	193000.
.008	32.3	10.2	.488	.154	31.8	10.0	649.					244000.	221000.	245000.	244000.	244000.	221000.
.01	32.0	12.0	.600	.225	31.4	11.8	526.					178000.	163000.	179000.	178000.	178000.	163000.
.015	31.4	15.3	.869	.423	30.6	14.9	345.					109000.	102000.	110000.	109000.	109000.	102000.
.02	30.9	17.4	1.11	.628	29.8	16.8	242.					49600.	47000.	50300.	49600.	49600.	47000.
K .029200	29.9	19.9	1.52	1.01	28.4	18.9	141.					26900.	25800.	27400.	26900.	26900.	25800.
.03	29.9	20.0	1.55	1.04	28.3	19.0	136.					8760.	8520.	9120.	8780.	8760.	8520.
.04	28.9	21.4	1.93	1.43	27.0	20.0	88.3					3950.	3870.	4210.	3970.	3950.	3870.
.05	28.1	22.1	2.26	1.78	25.8	20.3	62.3					1340.	1320.	1500.	1340.	1340.	1320.
.06	27.3	22.4	2.56	2.10	24.7	20.3	46.1					8680.	3190.	8840.	8700.	8680.	3190.
.08	25.9	22.4	3.03	2.62	22.8	19.8	27.8					8090.	3110.	8250.	8110.	8090.	3110.
.1	24.6	22.1	3.40	3.05	21.2	19.1	18.4					3680.	1980.	3790.	3700.	3680.	1980.
.15	22.2	20.9	4.02	3.79	18.2	17.1	8.66					2000.	1260.	2080.	2020.	2000.	1260.
.2	20.3	19.5	4.39	4.22	15.9	15.3	5.00					1220.	844.	1290.	1240.	1220.	846.
.3	17.7	17.3	4.76	4.66	12.9	12.6	2.27					545.	419.	595.	567.	548.	422.
.4	15.8	15.6	4.90	4.80	10.9	10.8	1.29					290.	236.	330.	312.	293.	239.
.5	14.5	14.3	4.93	4.85	9.52	9.45	.836					92.0	80.7	122.	113.	96.0	84.5
.6	13.4	13.3	4.91	4.84	8.46	8.46	.581					40.8	37.0	64.3	60.3	45.2	41.2
.8	11.7	11.7	4.80	4.69	6.94	7.01	.328					12.9	12.1	32.5	30.2	17.7	16.8
1.	10.6	10.5	4.64	4.48	5.91	6.02	.212					6.08	5.80	23.0	21.7	11.0	10.6
1.5	8.58	8.56	4.24	4.11	4.33	4.45	.0943	.147		.147	.045	3.40	3.27	18.5	17.7	8.33	8.12
2.	7.31	7.31	3.88	3.71	3.43	3.60	.0537	.516		.516	.238	2.18	2.11	16.1	15.5	7.09	6.99
3.	5.75	5.75	3.32	3.09	2.43	2.66	.0248	1.35	.00201	1.35	.834	1.10	1.07	13.1	12.8	5.90	5.76
4.	4.81	4.81	2.92	2.66	1.89	2.15	.0136	2.13	.00828	2.14	1.46	.690	.677	11.4	11.2	5.33	5.16
5.	4.15	4.15	2.61	2.32	1.55	1.83	.00887	2.80	.0162	2.82	2.03	.325	.321	9.13	9.03	4.71	4.48
6.	3.67	3.67	2.36	2.05	1.31	1.62	.00614	3.33	.0252	3.36	2.49	.201	.199	8.08	8.03	4.60	4.15
8.	3.00	3.00	2.00	1.66	.999	1.34	.00332	4.20	.0427	4.24	3.21	.108	.107	7.23	7.21	4.78	4.03
10.	2.56	2.56	1.75	1.37	.809	1.19	.00208	4.95	.0583	5.01	3.82	.0712	.0709	7.03	7.02	5.13	4.19
15.	1.89	1.89	1.34	.990	.549	.900		6.42	.0916	6.51	4.79	.0530	.0528	7.03	7.02	5.48	4.40
20.	1.52	1.52	1.10	.762	.415	.758		7.50	.116	7.62	5.25	.0421	.0420	7.08	7.07	5.76	4.58
30.	1.11	1.11	.826	.497	.279	.613		8.95	.152	9.10	5.73	.0294	.0293	7.27	7.27	6.27	4.90
40.	.879	.879	.668	.350	.211	.529		9.92	.177	10.1	5.79	.0227	.0227	7.59	7.59	6.78	5.21
50.	.734	.734	.565	.265	.169	.469		10.6	.196	10.8	5.71	.0142	.0142	8.41	8.41	7.86	5.79
60.	.632	.632	.491	.208	.141	.424		11.3	.212	11.5	5.69	.0104	.0104	9.15	9.15	8.73	6.02
80.	.498	.498	.392	.140	.106	.358		12.1	.234	12.3	5.54	.00670	.00670	10.2	10.2	9.93	6.23
100.	.414	.414	.329	.102	.0853	.312		12.8	.252	13.1	5.38	.00492	.00492	11.0	11.0	10.8	6.14
												.00388	.00388	11.5	11.5	11.4	5.98
												.00320	.00320	12.1	12.1	12.0	5.90
												.00235	.00235	12.8	12.8	12.7	5.68
												.00185	.00185	13.5	13.5	13.4	5.48

50 TIN
(cm^2/g = 0.005074 x barns/atom)

E (MeV)	$(\frac{\mu}{\rho})^{KN}_{inc,t}$	$(\frac{\mu}{\rho})^{BD}_{inc,t}$	$(\frac{\mu}{\rho})^{KN}_{inc,a}$	$(\frac{\mu}{\rho})^{BD}_{inc,a}$	$(\frac{\mu}{\rho})^{KN}_{inc,s}$	$(\frac{\mu}{\rho})^{BD}_{inc,s}$	$(\frac{\mu}{\rho})_{coh}$	$(\frac{\mu}{\rho})_{\kappa n}$	$(\frac{\mu}{\rho})_{\kappa e}$	$(\frac{\mu}{\rho})_{\kappa,t}$	$(\frac{\mu}{\rho})_{\kappa,a}$	$(\frac{\mu}{\rho})_{\tau,t}$	$(\frac{\mu}{\rho})_{\tau,a}$	$(\frac{\mu}{\rho})_{tot,t}$	$(\frac{\mu}{\rho})_{tot,t-coh}$	$(\frac{\mu}{\rho})_{tot,a}$	$(\frac{\mu}{\rho})_{tot,en}$
.001	.168	.00533	.000327	.0000104	.168	.00533	7.97					11400.	11400.	11400.	11400.	11400.	11400.
.0015	.168	.00969	.000489	.0000283	.167	.00964	7.56					3910.	3910.	3920.	3910.	3910.	3910.
.002	.167	.0141	.000649	.0000543	.167	.0140	7.15					1830.	1830.	1830.	1830.	1830.	1830.
.003	.167	.0221	.000969	.000128	.166	.0219	6.24					624.	624.	629.	624.	624.	624.
L_{III} .003929	.166	.0286	.00126	.000216	.165	.0284	5.53					306.	306.	312.	306.	306.	306.
												1130.	1010.	1130.	1130.	1130.	1010.
.004	.166	.0291	.00128	.000224	.165	.0289	5.48					1060.	954.	1070.	1060.	1060.	954.
L_{II} .004156	.166	.0301	.00133	.000241	.165	.0299	5.38					929.	837.	934.	929.	929.	837.
												1280.	1160.	1290.	1280.	1280.	1160.
L_{I} .004465	.166	.0322	.00142	.000276	.164	.0319	5.12					1080.	979.	1090.	1080.	1080.	979.
												1240.	1120.	1240.	1240.	1240.	1120.
.005	.165	.0355	.00158	.000340	.164	.0352	4.78					903.	827.	908.	903.	903.	827.
.006	.165	.0414	.00189	.000474	.163	.0409	4.19					553.	516.	558.	553.	553.	516.
.008	.164	.0518	.00248	.000781	.161	.0507	3.29					252.	238.	255.	252.	252.	238.
.01	.162	.0609	.00304	.00114	.159	.0599	2.67					136.	131.	139.	136.	136.	131.
.015	.159	.0776	.00441	.00215	.155	.0756	1.75					44.4	43.2	46.3	44.5	44.4	43.2
.02	.157	.0883	.00563	.00319	.151	.0852	1.23					20.0	19.6	21.4	20.1	20.0	19.6
K .029200	.152	.101	.00771	.00512	.144	.0959	.715					6.80	6.70	7.61	6.90	6.80	6.78
												44.0	16.2	44.9	44.1	44.0	16.2
.03	.152	.101	.00786	.00528	.144	.0964	.690					41.0	15.8	41.9	41.2	41.0	15.8
.04	.147	.109	.00979	.00726	.137	.101	.448					18.7	10.0	19.2	18.8	18.7	10.0
.05	.143	.112	.0115	.00903	.131	.103	.316					10.1	6.39	10.6	10.2	10.1	6.39
.06	.139	.114	.0130	.0107	.125	.103	.234					6.19	4.28	6.55	6.29	6.19	4.29
.08	.131	.114	.0154	.0133	.116	.100	.141					2.77	2.13	3.02	2.88	2.78	2.14
.1	.125	.112	.0173	.0155	.108	.0969	.0934					1.47	1.20	1.67	1.58	1.49	1.21
.15	.113	.106	.0204	.0192	.0923	.0868	.0439					.467	.409	.619	.573	.487	.429
.2	.103	.0989	.0223	.0214	.0807	.0776	.0254					.207	.188	.331	.306	.229	.209
.3	.0898	.0878	.0242	.0236	.0655	.0639	.0115					.0655	.0614	.165	.153	.0898	.0852
.4	.0802	.0792	.0249	.0244	.0553	.0548	.00655					.0308	.0294	.117	.110	.0558	.0538
.5	.0736	.0726	.0250	.0246	.0483	.0479	.00424					.0173	.0166	.0939	.0898	.0423	.0412
.6	.0680	.0675	.0249	.0246	.0429	.0429	.00295					.0111	.0107	.0817	.0786	.0360	.0353
.8	.0594	.0594	.0244	.0238	.0352	.0356	.00166					.00558	.00543	.0665	.0649	.0299	.0292
1.	.0538	.0533	.0235	.0227	.0300	.0305	.00108					.00350	.00344	.0578	.0568	.0270	.0262
1.5	.0435	.0434	.0215	.0209	.0220	.0226	.000478	.000746		.000746	.000228	.00165	.00163	.0463	.0458	.0239	.0227
2.	.0371	.0371	.0197	.0188	.0174	.0183	.000272	.00262		.00262	.00121	.00102	.00101	.0410	.0407	.0233	.0211
3.	.0292	.0292	.0168	.0157	.0123	.0135	.000122	.00685	.0000102	.00685	.00423	.000548	.000543	.0367	.0366	.0243	.0204
4.	.0244	.0244	.0148	.0135	.00959	.0109	.0000690	.0108	.0000420	.0109	.00741	.000361	.000360	.0357	.0356	.0260	.0213
5.	.0211	.0211	.0132	.0118	.00786	.00929	.0000450	.0142	.0000822	.0143	.0103	.000269	.000268	.0357	.0356	.0278	.0223
6.	.0186	.0186	.0120	.0104	.00665	.00822	.0000312	.0169	.000128	.0170	.0126	.000214	.000213	.0359	.0359	.0292	.0232
8.	.0152	.0152	.0101	.00842	.00507	.00680	.0000168	.0213	.000217	.0215	.0163	.000149	.000149	.0369	.0369	.0318	.0240
10.	.0130	.0130	.00888	.00695	.00410	.00604	.0000106	.0251	.000296	.0254	.0194	.000115	.000115	.0385	.0385	.0344	.0264
15.	.00959	.00959	.00680	.00502	.00279	.00457		.0326	.000465	.0330	.0243	.0000721	.0000721	.0427	.0427	.0399	.0294
20.	.00771	.00771	.00558	.00387	.00211	.00385		.0381	.000589	.0387	.0266	.0000528	.0000528	.0464	.0464	.0443	.0305
30.	.00563	.00563	.00419	.00252	.00142	.00311		.0454	.000771	.0462	.0291	.0000340	.0000340	.0518	.0518	.0504	.0316
40.	.00446	.00446	.00339	.00178	.00107	.00268		.0503	.000898	.0512	.0294	.0000250	.0000250	.0558	.0558	.0548	.0312
50.	.00372	.00372	.00287	.00134	.000858	.00238		.0538	.000995	.0548	.0290	.0000197	.0000197	.0584	.0584	.0578	.0303
60.	.00321	.00321	.00249	.00106	.000715	.00215		.0573	.00108	.0584	.0289	.0000162	.0000162	.0614	.0614	.0609	.0299
80.	.00253	.00253	.00199	.000710	.000538	.00182		.0614	.00119	.0624	.0281	.0000119	.0000119	.0649	.0649	.0644	.0288
100.	.00210	.00210	.00167	.000518	.000433	.00158		.0649	.00128	.0665	.0273	.0000094	.0000094	.0685	.0685	.0680	.0278

51 ANTIMONY
(barns/atom)

E (MeV)	$\sigma^{KN}_{inc,t}$	$\sigma^{BD}_{inc,t}$	$\sigma^{KN}_{inc,a}$	$\sigma^{BD}_{inc,a}$	$\sigma^{KN}_{inc,s}$	$\sigma^{BD}_{inc,s}$	σ_{coh}	$\sigma_{\gamma n}$	$\sigma_{\gamma e}$	$\sigma_{\gamma,t}$	$\sigma_{\gamma,a}$	$\sigma_{\gamma,t}$	$\sigma_{\gamma,a}$	$\sigma_{tot,t}$	$\sigma_{tot,t-coh}$	$\sigma_{tot,a}$	$\sigma_{tot,en}$
.001	33.8	1.02	.0658	.00199	33.7	1.02	1640.					2460000.	2460000.	2460000.	2460000.	2460000.	2460000.
.0015	33.7	1.89	.0984	.00551	33.6	1.88	1550.					843000.	843000.	845000.	843000.	843000.	843000.
.002	33.7	2.77	.131	.0107	33.5	2.76	1460.					394000.	394000.	395000.	394000.	394000.	394000.
.003	33.5	4.41	.194	.0256	33.3	4.38	1280.					134000.	134000.	135000.	134000.	134000.	134000.
.004	33.4	5.86	.257	.0451	33.1	5.81	1120.					62900.	62900.	64000.	62900.	62900.	62900.
L_{III} .004132	33.4	6.04	.265	.0488	33.1	5.99	1100.					57600.	57600.	58700.	57600.	57600.	57600.
												209000.	187000.	210000.	209000.	209000.	187000.
L_{II} .004381	33.4	6.37	.281	.0536	33.1	6.32	1060.					172000.	155000.	173000.	172000.	172000.	155000.
												237000.	213000.	238000.	237000.	237000.	213000.
L_{I} .004698	33.3	6.77	.300	.0618	33.0	6.71	1020.					200000.	181000.	201000.	200000.	200000.	181000.
												229000.	207000.	230000.	229000.	229000.	207000.
.005	33.3	7.15	.319	.0685	33.0	7.08	978.					196000.	177000.	195000.	194000.	194000.	177000.
.006	33.1	8.32	.379	.0953	32.8	8.22	860.					118000.	109000.	119000.	118000.	118000.	109000.
.008	32.9	10.4	.498	.157	32.4	10.2	676.					53900.	50900.	54600.	53900.	53900.	50900.
.01	32.7	12.2	.612	.229	32.1	12.0	548.					29100.	27800.	29700.	29100.	29100.	27800.
.015	32.1	15.5	.887	.429	31.2	15.1	360.					9520.	9230.	9900.	9540.	9520.	9230.
.02	31.5	17.7	1.14	.639	30.4	17.1	253.					4280.	4180.	4550.	4300.	4280.	4180.
.03	30.5	20.3	1.59	1.06	28.9	19.2	143.					1350.	1330.	1510.	1370.	1350.	1330.
K .030491	30.4	20.4	1.61	1.08	28.8	19.3	139.					1290.	1270.	1450.	1310.	1290.	1270.
												8280.	3000.	8440.	8300.	8280.	3000.
.04	29.5	21.7	1.97	1.45	27.5	20.3	92.5					3940.	2020.	4090.	3960.	3940.	2020.
.05	28.6	22.4	2.31	1.81	26.3	20.6	65.3					2160.	1320.	2250.	2180.	2140.	1320.
.06	27.8	22.8	2.61	2.14	25.2	20.7	48.5					1310.	885.	1380.	1330.	1310.	887.
.08	26.4	22.8	3.09	2.67	23.3	20.1	29.2					590.	447.	642.	613.	593.	450.
.1	25.1	22.5	3.47	3.10	21.7	19.4	19.4					312.	251.	354.	334.	315.	254.
.15	22.6	21.3	4.11	3.87	18.5	17.4	9.11					99.9	86.9	130.	121.	104.	90.8
.2	20.7	19.9	4.48	4.3	16.2	15.6	5.26					44.2	39.9	69.4	64.1	48.7	44.2
.3	18.0	17.6	4.86	4.74	13.2	12.9	2.39					14.1	13.2	34.1	31.7	19.0	17.9
.4	16.1	15.9	5.00	4.90	11.1	11.0	1.36					6.62	6.30	23.9	22.5	11.6	11.2
.5	14.7	14.6	5.03	4.96	9.72	9.64	.879					3.70	3.56	19.2	18.3	8.73	8.52
.6	13.6	13.5	5.01	4.91	8.63	8.59	.607					2.37	2.29	16.5	15.9	7.38	7.20
.8	12.0	11.9	4.98	4.77	7.08	7.13	.343					1.20	1.17	13.4	13.1	6.10	5.94
1.	10.8	10.7	4.74	4.56	6.03	6.14	.222					.755	.740	11.7	11.5	5.50	5.30
1.5	8.75	8.73	4.33	4.19	4.42	4.54	.0993	.155		.155	.0474	.352	.347	9.34	9.24	4.84	4.58
2.	7.46	7.45	3.96	3.78	3.50	3.67	.0562	.548		.540	.249	.220	.218	8.27	8.21	4.72	4.25
3.	5.87	5.86	3.39	3.15	2.48	2.71	.0251	1.48	.00205	1.40	.865	.117	.116	7.40	7.38	4.91	4.13
4.	4.91	4.91	2.98	2.72	1.93	2.19	.0142	2.22	.00843	2.23	1.52	.0773	.0769	7.23	7.22	5.29	4.32
5.	4.24	4.24	2.66	2.37	1.58	1.87	.00932	2.90	.0165	2.92	2.10	.0574	.0572	7.23	7.22	5.64	4.53
6.	3.74	3.74	2.41	2.09	1.33	1.65	.00647	3.46	.0257	3.49	2.59	.0456	.0455	7.28	7.28	5.95	4.73
8.	3.06	3.06	2.04	1.69	1.02	1.37	.00352	4.35	.0435	4.39	3.32	.0320	.0319	7.49	7.48	6.46	5.04
10.	2.61	2.61	1.78	1.40	.826	1.21	.00219	5.12	.0594	5.18	3.96	.0249	.0249	7.82	7.81	6.98	5.36
15.	1.93	1.93	1.37	1.01	.560	.923	.00103	6.64	.0934	6.73	4.94	.0155	.0155	8.68	8.68	8.12	5.97
20.	1.55	1.55	1.13	.773	.424	.777		7.75	.118	7.87	5.40	.0113	.0113	9.43	9.43	9.01	6.18
30.	1.13	1.13	.843	.503	.285	.627		9.28	.154	9.43	5.92	.00735	.00735	10.6	10.6	10.3	6.43
40.	.897	.897	.681	.356	.215	.541		10.3	.181	10.5	5.97	.00538	.00538	11.4	11.4	11.2	6.33
50.	.749	.749	.576	.27	.172	.479		11.1	.200	11.3	5.93	.00426	.00426	12.1	12.1	11.9	6.20
60.	.645	.645	.500	.211	.144	.434		11.7	.216	11.9	5.85	.00350	.00350	12.5	12.5	12.4	6.06
80.	.508	.508	.400	.143	.109	.365		12.5	.240	12.7	5.68	.00257	.00257	13.2	13.2	13.1	5.83
100.	.422	.422	.335	.104	.0871	.318		13.2	.256	13.5	5.49	.00201	.00201	13.9	13.9	13.8	5.60

51 ANTIMONY

(cm^2/g = 0.004947 x barns/atom)

E (MeV)	$(\frac{\mu}{\rho})^{KN}_{inc,t}$	$(\frac{\mu}{\rho})^{BD}_{inc,t}$	$(\frac{\mu}{\rho})^{KN}_{inc,a}$	$(\frac{\mu}{\rho})^{BD}_{inc,a}$	$(\frac{\mu}{\rho})^{KN}_{inc,s}$	$(\frac{\mu}{\rho})^{BD}_{inc,s}$	$(\frac{\mu}{\rho})_{coh}$	$(\frac{\mu}{\rho})_{\kappa_n}$	$(\frac{\mu}{\rho})_{\kappa_e}$	$(\frac{\mu}{\rho})_{\kappa,t}$	$(\frac{\mu}{\rho})_{\kappa,a}$	$(\frac{\mu}{\rho})_{\tau,t}$	$(\frac{\mu}{\rho})_{\tau,a}$	$(\frac{\mu}{\rho})_{tot,t}$	$(\frac{\mu}{\rho})_{tot,t-coh}$	$(\frac{\mu}{\rho})_{tot,a}$	$(\frac{\mu}{\rho})_{tot,en}$
.001	.167	.00505	.000326	.00000980	.167	.00505	8.11					12200.	12200.	12200.	12200.	12200.	12200.
.0015	.167	.00935	.000487	.0000273	.166	.00930	7.67					4170.	4170.	4180.	4170.	4170.	4170.
.002	.167	.0137	.000648	.0000529	.166	.0137	7.22					1950.	1950.	1950.	1950.	1950.	1950.
.003	.166	.0218	.000960	.000127	.165	.0217	6.33					663.	663.	668.	663.	663.	663.
.004	.165	.0290	.00127	.000223	.164	.0287	5.54					311.	311.	317.	311.	311.	311.
L_{III} .004132	.165	.0299	.00131	.000237	.164	.0296	5.44					285.	285.	290.	285.	285.	285.
L_{II} .004381	.165	.0315	.00139	.000265	.164	.0313	5.24					1030.	925.	1040.	1030.	1030.	925.
L_{I} .004698	.165	.0335	.00148	.000302	.163	.0332	5.05					851.	767.	856.	851.	851.	767.
.005	.165	.0354	.00158	.000339	.163	.0350	4.84					1170.	1050.	1180.	1170.	1170.	1050.
.006	.164	.0412	.00187	.000471	.162	.0407	4.25					989.	895.	994.	989.	989.	895.
.008	.163	.0514	.00246	.000777	.160	.0505	3.34					1130.	1020.	1140.	1130.	1130.	1020.
.01	.162	.0604	.00303	.00113	.159	.0594	2.71					960.	876.	965.	960.	960.	876.
.015	.159	.0767	.00439	.00212	.154	.0747	1.78					584.	539.	589.	584.	584.	539.
.02	.156	.0876	.00564	.00316	.150	.0846	1.25					267.	252.	270.	267.	267.	252.
.03	.151	.100	.00787	.00524	.143	.0950	.707					144.	138.	147.	144.	144.	138.
K .030491	.150	.101	.00796	.00534	.142	.0955	.688					47.1	45.7	49.8	47.2	47.1	45.7
.04	.146	.107	.00975	.00717	.136	.100	.458					21.2	20.7	22.5	21.3	21.2	20.7
.05	.141	.111	.0114	.00895	.130	.102	.323					6.68	6.58	7.47	6.76	6.68	6.58
.06	.138	.113	.0129	.0106	.125	.102	.240					6.38	6.28	7.17	6.48	6.38	6.28
.08	.131	.113	.0153	.0132	.115	.0994	.144					41.0	14.8	41.8	41.1	41.0	14.8
.1	.124	.111	.0172	.0153	.107	.0960	.096					19.5	9.99	20.0	19.6	19.5	9.99
.15	.112	.105	.0203	.0191	.0915	.0861	.0451					10.7	6.53	11.1	10.8	10.7	6.53
.2	.102	.0984	.0222	.0213	.0801	.0772	.0260					6.48	4.38	6.83	6.58	6.48	4.39
.3	.0890	.0871	.0240	.0234	.0653	.0638	.0118					2.92	2.21	3.18	3.03	2.93	2.23
.4	.0796	.0787	.0247	.0242	.0549	.0544	.00673					1.54	1.24	1.75	1.65	1.56	1.26
.5	.0727	.0722	.0249	.0245	.0481	.0477	.00435					.494	.430	.643	.599	.514	.440
.6	.0673	.0668	.0248	.0243	.0427	.0425	.00300					.219	.197	.343	.317	.241	.219
.8	.0594	.0589	.0242	.0236	.0350	.0353	.00170					.0698	.0653	.169	.157	.0940	.0886
1.	.0534	.0529	.0234	.0226	.0298	.0304	.00110					.0327	.0312	.118	.111	.0574	.0554
1.5	.0433	.0432	.0214	.0207	.0219	.0225	.000491	.000767		.000767	.000234	.0183	.0176	.0950	.0905	.0432	.0421
2.	.0369	.0369	.0196	.0187	.0173	.0182	.000278	.00267		.00267	.00123	.0117	.0113	.0816	.0787	.0365	.0356
3.	.0290	.0290	.0168	.0156	.0123	.0134	.000124	.00693	.0000101	.00693	.00428	.00594	.00579	.0663	.0648	.0302	.0294
4.	.0243	.0243	.0147	.0135	.00955	.0108	.0000702	.0110	.0000417	.0110	.00752	.00373	.00366	.0570	.0569	.0272	.0262
5.	.0210	.0210	.0132	.0117	.00782	.00925	.0000461	.0143	.0000816	.0144	.0104	.00174	.00172	.0462	.0457	.0239	.0227
6.	.0185	.0185	.0119	.0103	.00658	.00816	.0000320	.0171	.0000127	.0173	.0128	.00109	.00108	.0400	.0406	.0233	.0210
8.	.0151	.0151	.0101	.00836	.00505	.00678	.0000174	.0215	.0000215	.0217	.0164	.000579	.000574	.0366	.0365	.0243	.0204
10.	.0129	.0129	.00881	.00693	.00409	.00599	.0000108	.0253	.0000294	.0256	.0195	.000382	.000380	.0358	.0357	.0262	.0214
15.	.00955	.00955	.00678	.00500	.00277	.00457	.0000051	.0328	.0000462	.0333	.0244	.000284	.000283	.0358	.0357	.0279	.0224
20.	.00767	.00767	.00559	.00382	.00210	.00384		.0383	.0000584	.0389	.0267	.000226	.000225	.0360	.0360	.0294	.0234
30.	.00559	.00559	.00417	.00249	.00141	.00310		.0459	.0000762	.0467	.0293	.000158	.000158	.0371	.0370	.0328	.0249
40.	.00444	.00444	.00337	.00176	.00106	.00268		.0510	.0000895	.0519	.0295	.000123	.000123	.0387	.0386	.0345	.0265
50.	.00371	.00371	.00285	.00134	.000851	.00237		.0549	.0000989	.0559	.0293	.0000767	.0000767	.0420	.0420	.0402	.0295
60.	.00319	.00319	.00247	.00104	.000712	.00215		.0579	.00107	.0589	.0289	.0000559	.0000559	.0467	.0467	.0446	.0306
80.	.00251	.00251	.00198	.000707	.000539	.00181		.0618	.00119	.0628	.0281	.0000364	.0000364	.0524	.0524	.0510	.0318
100.	.00209	.00209	.00166	.000514	.000431	.00157		.0653	.00127	.0668	.0272	.0000266	.0000266	.0564	.0564	.0554	.0313
												.0000211	.0000211	.0599	.0599	.0589	.0307
												.0000173	.0000173	.0618	.0618	.0613	.0300
												.0000127	.0000127	.0653	.0653	.0648	.0288
												.0000099	.0000099	.0688	.0688	.0683	.0277

52 TELLURIUM
(barns/atom)

E (MeV)	KN $\sigma_{inc,t}$	BD $\sigma_{inc,t}$	KN $\sigma_{inc,a}$	BD $\sigma_{inc,a}$	KN $\sigma_{inc,s}$	BD $\sigma_{inc,s}$	σ_{coh}	σ_{x_n}	σ_{x_e}	$\sigma_{x,t}$	$\sigma_{x,a}$	$\sigma_{r,t}$	$\sigma_{r,a}$	$\sigma_{tot,t}$	$\sigma_{tot,t-coh}$	$\sigma_{tot,a}$	$\sigma_{tot,en}$
.001	34.5	.983	.0671	.00191	34.4	.981	1700.					2130000.	2130000.	2130000.	2130000.	2130000.	2130000.
M_I .001006	34.5	.993	.0676	.00195	34.4	.991	1700.					2110000.	2110000.	2110000.	2110000.	2110000.	2110000.
												2640000.	2640000.	2640000.	2640000.	2640000.	2640000.
.0015	34.4	1.84	.100	.00537	34.3	1.83	1610.					920000.	920000.	922000.	920000.	920000.	920000.
.002	34.3	2.74	.133	.0106	34.2	2.73	1520.					430000.	430000.	432000.	430000.	430000.	430000.
.003	34.2	4.45	.198	.0258	34.0	4.42	1320.					147000.	147000.	148000.	147000.	147000.	147000.
.004	34.1	5.97	.262	.0459	33.8	5.92	1160.					68600.	68600.	69800.	68600.	68600.	68600.
L_{III} .004341	34.0	6.45	.284	.0538	33.7	6.40	1110.					55100.	55100.	56200.	55100.	55100.	55100.
												197000.	175000.	198000.	197000.	197000.	175000.
L_{II} .004612	34.0	6.81	.301	.0603	33.7	6.75	1070.					161000.	144000.	162000.	161000.	161000.	144000.
												222000.	198000.	223000.	222000.	222000.	198000.
L_I .004939	33.9	7.23	.321	.0684	33.6	7.16	1020.					188000.	169000.	189000.	188000.	188000.	169000.
												216000.	194000.	217000.	216000.	216000.	194000.
.005	33.9	7.31	.325	.0700	33.6	7.24	1010.					210000.	189000.	211000.	210000.	210000.	189000.
.006	33.8	8.50	.387	.0973	33.4	8.40	893.					128000.	117000.	129000.	128000.	128000.	117000.
.008	33.5	10.6	.508	.160	33.0	10.4	704.					58600.	55000.	59300.	58600.	58600.	55000.
.01	33.3	12.4	.624	.232	32.7	12.2	571.					31700.	30100.	32300.	31700.	31700.	30100.
.015	32.7	15.8	.904	.437	31.8	15.4	374.					10300.	9960.	10700.	10300.	10300.	9960.
.02	32.1	18.0	1.16	.650	31.0	17.4	265.					4650.	4540.	4930.	4670.	4650.	4540.
.03	31.1	20.6	1.62	1.07	29.5	19.5	149.					1470.	1450.	1640.	1490.	1470.	1450.
K .031814	30.9	21.8	1.69	1.15	29.2	19.8	137.					1250.	1230.	1410.	1270.	1250.	1230.
												7900.	2820.	8060.	7920.	7900.	2820.
.04	30.1	22.1	2.01	1.47	28.1	20.6	96.9					4220.	2060.	4340.	4240.	4220.	2060.
.05	29.2	22.8	2.36	1.84	26.8	21.0	68.4					2310.	1370.	2400.	2330.	2310.	1370.
.06	28.4	23.2	2.66	2.18	25.7	21.0	50.8					1410.	930.	1480.	1430.	1410.	932.
.08	26.9	23.2	3.15	2.72	23.7	20.5	30.7					630.	469.	684.	653.	633.	472.
.1	25.6	22.9	3.54	3.16	22.1	19.7	20.3					338.	269.	381.	361.	342.	272.
.15	23.1	21.7	4.19	3.94	18.9	17.8	9.96					107.	92.4	138.	129.	111.	96.3
.2	21.1	20.3	4.57	4.39	16.6	15.9	5.52					47.9	43.0	73.7	68.2	52.5	47.4
.3	18.4	18.0	4.95	4.85	13.4	13.1	2.51					15.3	14.3	35.8	33.3	20.3	19.1
.4	16.5	16.2	5.10	4.99	11.4	11.2	1.43					7.18	6.81	24.8	23.4	12.3	11.8
.5	15.0	14.9	5.13	5.05	9.91	9.85	.924					4.04	3.87	19.9	18.9	9.17	8.92
.6	13.9	13.8	5.11	5.02	8.80	8.78	.641					2.60	2.51	17.0	16.4	7.71	7.53
.8	12.2	12.2	5.00	4.89	7.22	7.31	.361					1.31	1.28	13.9	13.5	6.31	6.17
1.	11.0	10.9	4.83	4.64	6.15	6.26	.233					.825	.808	12.0	11.7	5.66	5.45
1.5	8.92	8.90	4.41	4.27	4.51	4.63	.105	.163		.163	.0499	.387	.382	9.55	9.45	4.96	4.70
2.	7.61	7.60	4.04	3.85	3.57	3.75	.0591	.566		.566	.261	.239	.237	8.46	8.40	4.84	4.35
3.	5.99	5.98	3.45	3.21	2.53	2.77	.0266	1.46	.00209	1.46	.902	.128	.127	7.59	7.57	5.04	4.24
4.	5.00	5.00	3.04	2.75	1.97	2.24	.0149	2.30	.00860	2.31	1.58	.0845	.0841	7.41	7.39	5.43	4.41
5.	4.32	4.32	2.71	2.40	1.61	1.92	.00977	3.01	.0169	3.03	2.18	.0631	.0628	7.42	7.41	5.80	4.64
6.	3.82	3.82	2.46	2.12	1.36	1.70	.00681	3.59	.0262	3.62	2.68	.0500	.0498	7.50	7.49	6.13	4.85
8.	3.12	3.12	2.08	1.72	1.04	1.40	.00372	4.51	.0444	4.55	3.43	.0347	.0346	7.71	7.70	6.66	5.18
10.	2.66	2.66	1.82	1.42	.842	1.24	.00231	5.31	.0606	5.37	4.08	.0268	.0267	8.06	8.06	7.22	5.53
15.	1.97	1.97	1.40	1.02	.571	.946	.00108	6.90	.0953	7.00	5.12	.0169	.0169	8.99	8.99	8.42	6.16
20.	1.58	1.58	1.15	.785	.432	.795		8.03	.120	8.15	5.58	.0123	.0123	9.74	9.74	9.31	6.38
30.	1.15	1.15	.860	.508	.291	.642		9.63	.157	9.79	6.13	.00800	.00799	10.9	10.9	10.7	6.65
40.	.914	.914	.695	.359	.219	.555		10.7	.184	10.9	6.18	.00589	.00589	11.8	11.8	11.6	6.54
50.	.763	.763	.588	.273	.176	.490		11.5	.203	11.7	6.10	.00462	.00462	12.5	12.5	12.3	6.38
60.	.657	.657	.510	.214	.147	.443		12.1	.220	12.3	6.01	.00380	.00380	13.0	13.0	12.8	6.23
80.	.518	.518	.408	.145	.111	.373		13.0	.243	13.2	5.87	.00280	.00280	13.7	13.7	13.6	6.02
100.	.431	.431	.342	.106	.0888	.325		13.7	.261	14.0	5.65	.00220	.00220	14.4	14.4	14.3	5.76

52 TELLURIUM

(cm^2/g = 0.004720 x barns/atom)

E (MeV)	$(\frac{\mu}{\rho})^{KN}_{inc,t}$	$(\frac{\mu}{\rho})^{BD}_{inc,t}$	$(\frac{\mu}{\rho})^{KN}_{inc,a}$	$(\frac{\mu}{\rho})^{BD}_{inc,a}$	$(\frac{\mu}{\rho})^{KN}_{inc,s}$	$(\frac{\mu}{\rho})^{BD}_{inc,s}$	$(\frac{\mu}{\rho})_{coh}$	$(\frac{\mu}{\rho})_{\kappa n}$	$(\frac{\mu}{\rho})_{\kappa e}$	$(\frac{\mu}{\rho})_{\kappa,t}$	$(\frac{\mu}{\rho})_{\kappa,a}$	$(\frac{\mu}{\rho})_{\tau,t}$	$(\frac{\mu}{\rho})_{\tau,a}$	$(\frac{\mu}{\rho})_{tot,t}$	$(\frac{\mu}{\rho})_{tot,t-coh}$	$(\frac{\mu}{\rho})_{tot,a}$	$(\frac{\mu}{\rho})_{tot,en}$
.001	.163	.00464	.000317	.0000090	.162	.00463	8.02					10100.	10100.	10100.	10100.	10100.	10100.
M_I .001006	.163	.00469	.000319	.0000092	.162	.00468	8.02					9960.	9960.	9960.	9960.	9960.	9960.
.0015	.162	.00868	.000472	.0000253	.162	.00864	7.60					12500.	12500.	12500.	12500.	12500.	12500.
.002	.162	.0129	.000628	.0000500	.161	.0129	7.17					4340.	4340.	4350.	4340.	4340.	4340.
.003	.161	.0210	.000935	.000122	.160	.0209	6.23					2030.	2030.	2040.	2030.	2030.	2030.
.004	.161	.0282	.00124	.000217	.160	.0279	5.48					694.	694.	699.	694.	694.	694.
L_{III} .004341	.160	.0304	.00134	.000254	.159	.0302	5.24					324.	324.	329.	324.	324.	324.
L_{II} .004612	.160	.0321	.00142	.000285	.159	.0319	5.05					260.	260.	265.	260.	260.	260.
L_I .004939	.160	.0341	.00152	.000323	.159	.0338	4.81					930.	826.	935.	930.	930.	826.
.005	.160	.0345	.00153	.000330	.159	.0342	4.77					760.	680.	765.	760.	760.	680.
.006	.160	.0401	.00183	.000459	.158	.0396	4.21					1050.	935.	1050.	1050.	1050.	935.
.008	.158	.0500	.00240	.000755	.156	.0491	3.32					887.	798.	892.	887.	887.	798.
.01	.157	.0585	.00295	.00110	.154	.0576	2.70					1020.	916.	1020.	1020.	1020.	916.
.015	.154	.0746	.00427	.00206	.150	.0727	1.77					991.	892.	996.	991.	991.	892.
.02	.152	.0850	.00548	.00307	.146	.0821	1.25					604.	552.	609.	604.	604.	552.
.03	.147	.0972	.00765	.00505	.139	.0920	.703					277.	260.	280.	277.	277.	260.
K .031814	.146	.0991	.00798	.00543	.138	.0935	.647					150.	142.	152.	150.	150.	142.
.04	.142	.104	.00949	.00694	.133	.0972	.457					48.6	47.0	50.5	48.6	48.6	47.0
.05	.138	.108	.0111	.00868	.126	.0991	.323					21.9	21.4	23.3	22.0	21.9	21.4
.06	.134	.110	.0126	.0103	.121	.0991	.240					6.94	6.84	7.74	7.03	6.94	6.84
.08	.127	.110	.0149	.0128	.112	.0968	.145					5.90	5.81	6.66	5.99	5.90	5.81
.1	.121	.108	.0167	.0149	.104	.0930	.0958					37.3	13.3	38.0	37.4	37.3	13.3
.15	.109	.102	.0198	.0186	.0892	.0840	.0451					19.9	9.72	20.5	20.0	19.9	9.72
.2	.0996	.0958	.0216	.0207	.0784	.0750	.0261					10.9	6.47	11.3	11.0	10.9	6.47
.3	.0868	.0850	.0234	.0229	.0632	.0618	.0118					6.66	4.39	6.99	6.75	6.66	4.48
.4	.0779	.0765	.0241	.0236	.0538	.0529	.00675					2.97	2.21	3.23	3.08	2.99	2.23
.5	.0708	.0703	.0242	.0238	.0468	.0465	.00436					1.60	1.27	1.80	1.70	1.61	1.28
.6	.0656	.0651	.0241	.0237	.0415	.0414	.00303					.505	.436	.651	.609	.524	.455
.8	.0576	.0576	.0236	.0231	.0341	.0345	.00170					.226	.203	.348	.322	.248	.224
1.	.0519	.0514	.0228	.0219	.0290	.0295	.00110					.0722	.0675	.169	.157	.0958	.0902
1.5	.0421	.0420	.0208	.0202	.0213	.0219	.000496	.000769		.000769	.000236	.0339	.0321	.117	.110	.0581	.0557
2.	.0359	.0359	.0191	.0182	.0169	.0177	.000279	.00267		.00267	.00123	.0191	.0183	.0939	.0892	.0433	.0421
3.	.0283	.0282	.0163	.0152	.0119	.0131	.000126	.00689	.00000986	.00689	.00426	.0123	.0118	.0802	.0774	.0364	.0355
4.	.0236	.0236	.0143	.0130	.00930	.0106	.0000703	.0109	.0000406	.0109	.00746	.00618	.00604	.0656	.0637	.0298	.0291
5.	.0204	.0204	.0128	.0113	.00760	.00906	.0000461	.0142	.0000798	.0143	.0103	.00389	.00381	.0566	.0552	.0267	.0257
6.	.0180	.0180	.0116	.0100	.00642	.00802	.0000321	.0169	.000124	.0171	.0126	.00183	.00180	.0451	.0446	.0234	.0222
8.	.0147	.0147	.00982	.00812	.00491	.00661	.0000176	.0213	.000210	.0215	.0162	.00113	.00112	.0399	.0396	.0228	.0205
10.	.0126	.0126	.00859	.00670	.00397	.00585	.0000109	.0251	.000286	.0253	.0193	.000604	.000599	.0358	.0357	.0238	.0200
15.	.00930	.00930	.00661	.00481	.00270	.00447	.0000051	.0326	.000650	.0330	.0242	.000399	.000397	.0350	.0349	.0256	.0208
20.	.00746	.00746	.00543	.00371	.00204	.00375		.0379	.000566	.0385	.0263	.000298	.000296	.0350	.0350	.0274	.0210
30.	.00543	.00543	.00406	.00240	.00137	.00303		.0455	.000741	.0462	.0289	.000236	.000235	.0354	.0354	.0289	.0229
40.	.00431	.00431	.00328	.00169	.00103	.00262		.0505	.000868	.0514	.0292	.000164	.000163	.0364	.0363	.0314	.0244
50.	.00360	.00360	.00278	.00129	.000831	.00231		.0543	.000958	.0552	.0288	.000126	.000126	.0380	.0380	.0341	.0261
60.	.00310	.00310	.00241	.00101	.000694	.00209		.0571	.00104	.0581	.0284	.0000798	.0000798	.0424	.0424	.0397	.0291
80.	.00244	.00244	.00193	.000684	.000524	.00176		.0614	.00115	.0623	.0277	.0000581	.0000581	.0460	.0460	.0439	.0301
100.	.00203	.00203	.00161	.000500	.000419	.00153		.0647	.00123	.0661	.0267	.0000378	.0000377	.0514	.0514	.0505	.0314
												.0000278	.0000278	.0557	.0557	.0548	.0309
												.0000218	.0000218	.0590	.0590	.0581	.0301
												.0000179	.0000179	.0614	.0614	.0604	.0294
												.0000132	.0000132	.0647	.0647	.0642	.0284
												.0000104	.0000104	.0680	.0680	.0675	.0272

53 IODINE
(barns/atom)

E (MeV)	KN $\sigma_{inc,t}$	BD $\sigma_{inc,t}$	KN $\sigma_{inc,a}$	BD $\sigma_{inc,a}$	KN $\sigma_{inc,s}$	BD $\sigma_{inc,s}$	σ_{coh}	$\sigma_{\kappa n}$	$\sigma_{\kappa e}$	$\sigma_{\kappa,t}$	$\sigma_{\kappa,a}$	$\sigma_{r,t}$	$\sigma_{r,a}$	$\sigma_{tot,t}$	$\sigma_{tot,t-coh}$	$\sigma_{tot,a}$	$\sigma_{tot,en}$
.001	35.1	.960	.0684	.00187	35.0	.958	1770.					2290000.	2290000.	2290000.	2290000.	2290000.	2290000.
M_I .001072	35.1	1.08	.0733	.00226	35.0	1.08	1760.					1950000.	1950000.	1950000.	1950000.	1950000.	1950000.
												2440000.	2440000.	2440000.	2440000.	2440000.	2440000.
.0015	35.0	1.82	.102	.00531	34.9	1.81	1680.					997000.	997000.	999000.	997000.	997000.	997000.
.002	35.0	2.75	.136	.0107	34.8	2.74	1580.					468000.	468000.	470000.	468000.	468000.	468000.
.003	34.8	4.52	.202	.0262	34.6	4.49	1370.					159000.	159000.	160000.	159000.	159000.	159000.
.004	34.7	6.11	.267	.0470	34.4	6.06	1200.					74500.	74500.	75700.	74500.	74500.	74500.
L_{III} .004557	34.6	6.89	.303	.0603	34.3	6.83	1110.					52700.	52700.	53800.	52700.	52700.	52700.
												185000.	164000.	186000.	185000.	185000.	164000.
L_{II} .004852	34.6	7.29	.322	.0678	34.3	7.22	1070.					151000.	135000.	152000.	151000.	151000.	135000.
												209000.	186000.	210000.	209000.	209000.	186000.
.005	34.6	7.48	.331	.0717	34.2	7.41	1050.					193000.	173000.	194000.	193000.	193000.	173000.
L_I .005188	34.6	7.72	.343	.0767	34.2	7.64	1030.					177000.	159000.	178000.	177000.	177000.	159000.
												203000.	182000.	204000.	203000.	203000.	182000.
.006	34.4	8.69	.394	.0995	34.1	8.59	927.					137000.	125000.	138000.	137000.	137000.	125000.
.008	34.2	10.8	.517	.164	33.7	10.6	733.					63400.	59200.	64100.	63400.	63400.	59200.
.01	33.9	12.6	.636	.236	33.3	12.4	594.					34200.	32400.	34800.	34200.	34200.	32400.
.015	33.3	16.0	.922	.443	32.4	15.6	389.					11200.	10800.	11600.	11200.	11200.	10800.
.02	32.7	18.3	1.18	.660	31.6	17.6	276.					5050.	4910.	5360.	5070.	5058.	4910.
.03	31.7	21.8	1.65	1.09	30.0	19.9	156.					1600.	1570.	1780.	1620.	1600.	1570.
K .033178	31.3	21.5	1.78	1.22	29.6	20.3	134.					1200.	1180.	1360.	1220.	1200.	1180.
												7560.	2660.	7700.	7560.	7540.	2660.
.04	30.7	22.4	2.05	1.49	28.6	20.9	101.					4540.	2100.	4660.	4560.	4540.	2100.
.05	29.8	23.2	2.40	1.87	27.4	21.3	71.6					2490.	1420.	2580.	2510.	2490.	1420.
.06	28.9	23.6	2.71	2.21	26.2	21.4	53.3					1510.	970.	1590.	1530.	1510.	972.
.08	27.4	23.6	3.21	2.76	24.2	20.8	32.2					680.	497.	736.	704.	683.	500.
.1	26.1	23.3	3.60	3.22	22.5	20.1	21.3					364.	286.	400.	387.	368.	289.
.15	23.5	22.1	4.27	4.01	19.2	18.1	10.0					117.	100.	149.	139.	121.	104.
.2	21.5	20.6	4.66	4.45	16.9	16.1	5.80					52.0	46.4	78.4	72.6	56.7	50.8
.3	18.7	18.3	5.05	4.93	13.7	13.4	2.64					16.7	15.5	37.6	35.0	21.8	20.4
.4	16.8	16.5	5.20	5.08	11.6	11.4	1.50					7.86	7.44	25.9	24.4	13.1	12.5
.5	15.3	15.2	5.23	5.15	10.1	10.0	.970					4.40	4.21	20.6	19.6	9.63	9.36
.6	14.2	14.1	5.21	5.13	8.97	8.97	.673					2.82	2.72	17.6	16.9	8.83	7.85
.8	12.4	12.4	5.09	4.97	7.36	7.43	.380					1.43	1.39	14.2	13.8	6.52	6.36
1.	11.2	11.1	4.92	4.72	6.27	6.38	.245					.900	.881	12.2	12.0	5.82	5.69
1.5	9.09	9.07	4.50	4.35	4.60	4.72	.110	.170		.170	.0520	.422	.416	9.77	9.66	5.09	4.82
2.	7.75	7.74	4.12	3.92	3.64	3.82	.0620	.590		.590	.273	.260	.257	8.65	8.59	4.97	4.45
3.	6.10	6.09	3.52	3.26	2.58	2.83	.0279	1.52	.00213	1.52	.938	.140	.139	7.78	7.75	5.18	4.34
4.	5.10	5.10	3.09	2.80	2.00	2.29	.0156	2.40	.00877	2.41	1.64	.0916	.0911	7.62	7.60	5.59	4.53
5.	4.40	4.40	2.77	2.44	1.64	1.96	.0102	3.12	.0172	3.14	2.25	.0682	.0679	7.62	7.61	5.98	4.76
6.	3.89	3.89	2.51	2.16	1.39	1.73	.00714	3.72	.0267	3.75	2.77	.0540	.0538	7.70	7.69	6.31	4.98
8.	3.18	3.18	2.12	1.75	1.06	1.43	.00394	4.69	.0452	4.74	3.56	.0378	.0377	7.96	7.96	6.90	5.35
10.	2.71	2.71	1.85	1.44	.858	1.27	.00243	5.50	.0619	5.56	4.21	.0290	.0289	8.30	8.30	7.44	5.69
15.	2.01	2.01	1.42	1.04	.582	.967	.00112	7.12	.0972	7.22	5.27	.0183	.0183	9.25	9.25	8.66	6.33
20.	1.61	1.61	1.17	.797	.440	.813		8.30	.123	8.42	5.74	.0132	.0132	10.0	10.0	9.60	6.55
30.	1.17	1.17	.876	.515	.296	.655		9.93	.160	10.1	6.27	.00860	.00859	11.3	11.3	11.0	6.79
40.	.932	.932	.708	.364	.224	.568		11.0	.188	11.2	6.31	.00630	.00630	12.1	12.1	11.9	6.68
50.	.778	.778	.599	.277	.179	.501		11.9	.207	12.1	6.28	.00500	.00500	12.9	12.9	12.7	6.56
60.	.670	.670	.520	.216	.150	.454		12.5	.223	12.7	6.16	.00410	.00410	13.4	13.4	13.2	6.38
80.	.528	.528	.416	.147	.113	.381		13.5	.248	13.7	6.04	.00302	.00302	14.2	14.2	14.1	6.19
100.	.439	.439	.348	.107	.0905	.332		14.2	.266	14.5	5.83	.00238	.00238	14.9	14.9	14.9	5.94

53 IODINE

(cm^2/g = 0.004746 x barns/atom)

E (MeV)	$(\frac{\mu}{\rho})^{KN}_{inc,t}$	$(\frac{\mu}{\rho})^{BD}_{inc,t}$	$(\frac{\mu}{\rho})^{KN}_{inc,a}$	$(\frac{\mu}{\rho})^{BD}_{inc,a}$	$(\frac{\mu}{\rho})^{KN}_{inc,s}$	$(\frac{\mu}{\rho})^{BD}_{inc,s}$	$(\frac{\mu}{\rho})_{coh}$	$(\frac{\mu}{\rho})_{\kappa n}$	$(\frac{\mu}{\rho})_{\kappa e}$	$(\frac{\mu}{\rho})_{\kappa,t}$	$(\frac{\mu}{\rho})_{\kappa,a}$	$(\frac{\mu}{\rho})_{\tau,t}$	$(\frac{\mu}{\rho})_{\tau,a}$	$(\frac{\mu}{\rho})_{tot,t}$	$(\frac{\mu}{\rho})_{tot,t-coh}$	$(\frac{\mu}{\rho})_{tot,a}$	$(\frac{\mu}{\rho})_{tot,en}$
.001	.167	.00456	.000325	.0000089	.166	.00455	8.40					10900.	10900.	10900.	10900.	10900.	10900.
M_I .001072	.167	.00513	.000348	.0000107	.166	.00513	8.35					9250.	9250.	9250.	9250.	9250.	9250.
												11600.	11600.	11600.	11600.	11600.	11600.
.0015	.166	.00864	.000484	.0000252	.166	.00859	7.97					4730.	4730.	4740.	4730.	4730.	4730.
.002	.166	.0131	.000645	.0000508	.165	.0130	7.50					2220.	2220.	2230.	2220.	2220.	2220.
.003	.165	.0215	.000959	.000124	.164	.0213	6.50					755.	755.	759.	755.	755.	755.
.004	.165	.0290	.00127	.000223	.163	.0288	5.70					354.	354.	359.	354.	354.	354.
L_{III} .004557	.164	.0327	.00144	.000286	.163	.0324	5.27					250.	250.	255.	250.	250.	250.
												878.	778.	883.	878.	878.	778.
L_{II} .004852	.164	.0346	.00153	.000322	.163	.0343	5.08					717.	641.	721.	717.	717.	641.
												992.	883.	997.	992.	992.	883.
.005	.164	.0355	.00157	.000340	.162	.0352	4.98					916.	821.	921.	916.	916.	821.
L_I .005188	.164	.0366	.00163	.000364	.162	.0363	4.89					840.	755.	845.	840.	840.	755.
												969.	864.	968.	963.	963.	864.
.006	.163	.0412	.00187	.000472	.162	.0408	4.40					650.	593.	655.	650.	650.	593.
.008	.162	.0513	.00245	.000778	.160	.0503	3.48					301.	281.	304.	301.	301.	281.
.01	.161	.0598	.00302	.00112	.158	.0589	2.82					162.	154.	165.	162.	162.	154.
.015	.158	.0759	.00438	.00210	.154	.0740	1.85					53.2	51.3	55.1	53.2	53.2	51.3
.02	.155	.0869	.00560	.00313	.150	.0835	1.31					24.0	23.3	25.3	24.1	24.0	23.3
.03	.150	.0997	.00783	.00517	.142	.0944	.740					7.59	7.45	8.45	7.69	7.59	7.45
K .03317	.149	.102	.00845	.00579	.140	.0963	.636					5.70	5.60	6.65	5.79	5.70	5.60
												35.8	12.6	36.5	35.9	35.8	12.6
.04	.146	.106	.00973	.00707	.136	.0992	.479					21.5	9.97	22.1	21.6	21.5	9.97
.05	.141	.110	.0114	.00888	.130	.101	.340					11.8	6.74	12.2	11.9	11.8	6.74
.06	.137	.112	.0129	.0105	.124	.102	.253					7.17	4.60	7.55	7.26	7.17	4.61
.08	.130	.112	.0152	.0131	.115	.0987	.153					3.23	2.36	3.49	3.34	3.24	2.37
.1	.124	.111	.0171	.0153	.107	.0954	.101					1.73	1.36	1.94	1.84	1.78	1.37
.15	.112	.105	.0203	.0190	.0911	.0859	.0475					.595	.478	.707	.660	.574	.494
.2	.102	.0978	.0221	.0211	.0802	.0764	.0275					.247	.220	.372	.345	.269	.241
.3	.0888	.0869	.0240	.0234	.0650	.0636	.0125					.0793	.0736	.178	.166	.103	.0968
.4	.0797	.0783	.0247	.0241	.0551	.0541	.00712					.0373	.0353	.123	.116	.0622	.0593
.5	.0726	.0721	.0248	.0244	.0479	.0475	.00466					.0209	.0200	.0978	.0930	.0457	.0444
.6	.0674	.0669	.0247	.0243	.0426	.0426	.00319					.0134	.0129	.0835	.0802	.0381	.0373
.8	.0589	.0589	.0242	.0236	.0349	.0353	.00180					.00679	.00660	.0674	.0655	.0309	.0302
1.	.0532	.0527	.0234	.0224	.0298	.0303	.00116					.00427	.00418	.0579	.0570	.0276	.0266
1.5	.0431	.0430	.0214	.0206	.0218	.0224	.000522	.000807		.000807	.000247	.00200	.00197	.0464	.0458	.0242	.0229
2.	.0368	.0367	.0196	.0186	.0173	.0181	.000294	.00280		.00280	.00130	.00123	.00122	.0411	.0408	.0236	.0211
3.	.0290	.0289	.0167	.0155	.0122	.0134	.000132	.00721	.0000101	.00721	.00445	.000664	.000660	.0369	.0368	.0244	.0206
4.	.0242	.0242	.0147	.0133	.00949	.0109	.0000740	.0114	.0000416	.0114	.00778	.000435	.000432	.0362	.0361	.0245	.0215
5.	.0209	.0209	.0131	.0116	.00778	.00930	.0000484	.0148	.0000816	.0149	.0107	.000324	.000322	.0362	.0361	.0284	.0226
6.	.0185	.0185	.0119	.0103	.00660	.00821	.0000339	.0177	.000127	.0178	.0131	.000256	.000255	.0365	.0365	.0299	.0236
8.	.0151	.0151	.0101	.00831	.00503	.00679	.0000187	.0223	.000215	.0225	.0169	.000179	.000179	.0378	.0378	.0327	.0254
10.	.0129	.0129	.00878	.00683	.00407	.00603	.0000115	.0261	.000294	.0264	.0200	.000138	.000137	.0394	.0394	.0353	.0278
15.	.00954	.00954	.00674	.00494	.00276	.00459	.0000053	.0338	.000461	.0343	.0250	.0000869	.0000869	.0439	.0439	.0411	.0309
20.	.00764	.00764	.00555	.00378	.00209	.00386		.0394	.000584	.0400	.0272	.0000626	.0000626	.0475	.0475	.0456	.0311
30.	.00555	.00555	.00416	.00244	.00140	.00311		.0471	.000759	.0479	.0298	.0000408	.0000408	.0536	.0536	.0522	.0322
40.	.00443	.00442	.00336	.00173	.00106	.00270		.0522	.000892	.0532	.0299	.0000299	.0000299	.0574	.0574	.0565	.0317
50.	.00369	.00369	.00284	.00131	.000850	.00238		.0565	.000982	.0574	.0298	.0000237	.0000237	.0612	.0612	.0603	.0311
60.	.00318	.00318	.00247	.00103	.000712	.00215		.0593	.00106	.0603	.0292	.0000195	.0000195	.0636	.0636	.0626	.0303
80.	.00251	.00251	.00197	.000698	.000536	.00181		.0641	.00118	.0650	.0287	.0000143	.0000143	.0674	.0674	.0669	.0294
100.	.00208	.00208	.00165	.000508	.000430	.00158		.0674	.00126	.0688	.0277	.0000113	.0000113	.0707	.0707	.0707	.0282

54 XENON
(barns/atom)

E (MeV)	KN $\sigma_{inc,t}$	BD $\sigma_{inc,t}$	KN $\sigma_{inc,a}$	BD $\sigma_{inc,a}$	KN $\sigma_{inc,s}$	BD $\sigma_{inc,s}$	σ_{coh}	$\sigma_{\gamma n}$	$\sigma_{\gamma e}$	$\sigma_{\gamma,t}$	$\sigma_{\gamma,a}$	$\sigma_{\gamma,t}$	$\sigma_{\gamma,a}$	$\sigma_{tot,t}$	$\sigma_{tot,t-coh}$	$\sigma_{tot,a}$	$\sigma_{tot,en}$
.001	35.8	.980	.0697	.00191	35.7	.978	1840.					2090000.	2090000.	2090000.	2090000.	2090000.	2090000.
M_I .001143	35.8	1.23	.0796	.00274	35.7	1.23	1810.					1810000.	1810000.	1810000.	1810000.	1810000.	1810000.
												2250000.	2250000.	2250000.	2250000.	2250000.	2250000.
.0015	35.7	1.87	.104	.00545	35.6	1.86	1740.					1090000.	1090000.	1090000.	1090000.	1090000.	1090000.
.002	35.6	2.81	.138	.0109	35.5	2.80	1640.					510000.	510000.	512000.	510000.	510000.	510000.
.003	35.5	4.63	.206	.0268	35.3	4.60	1420.					174000.	174000.	175000.	174000.	174000.	174000.
.004	35.4	6.26	.272	.0482	35.1	6.21	1240.					80900.	80900.	82100.	80900.	80900.	80900.
L_{III} .004782	35.3	7.38	.323	.0677	34.9	7.31	1120.					50400.	50400.	51500.	50400.	50400.	50400.
												175000.	154000.	176000.	175000.	175000.	154000.
.005	35.2	7.67	.337	.0735	34.9	7.60	1090.					151000.	134000.	152000.	151000.	151000.	134000.
L_{II} .005102	35.2	7.80	.344	.0762	34.9	7.72	1070.					142000.	126000.	143000.	142000.	142000.	126000.
												196000.	174000.	197000.	196000.	196000.	174000.
L_I .005445	35.2	8.23	.366	.0857	34.8	8.14	1030.					167000.	149000.	168000.	167000.	167000.	149000.
												192000.	171000.	193000.	192000.	192000.	171000.
.006	35.1	8.90	.402	.102	34.7	8.80	961.					147000.	133000.	148000.	147000.	147000.	133000.
.008	34.8	11.0	.527	.167	34.3	10.8	762.					68200.	63200.	69000.	68200.	68200.	63200.
.01	34.6	12.8	.648	.240	33.9	12.6	618.					36800.	34700.	37400.	36800.	36800.	34700.
.015	34.0	16.3	.939	.451	33.0	15.8	404.					12000.	11500.	12400.	12000.	12000.	11500.
.02	33.4	18.6	1.28	.671	32.2	17.9	288.					5420.	5260.	5730.	5440.	5420.	5260.
.03	32.3	21.3	1.68	1.11	30.6	20.2	163.					1730.	1700.	1910.	1750.	1710.	1700.
K .034561	31.8	22.1	1.87	1.30	29.9	20.8	132.					1160.	1140.	1310.	1180.	1160.	1140.
												7200.	2510.	7350.	7220.	7200.	2510.
.04	31.2	22.8	2.08	1.52	29.2	21.3	106.					4850.	2120.	4980.	4870.	4850.	2120.
.05	30.3	23.6	2.45	1.90	27.9	21.7	74.9					2660.	1460.	2760.	2680.	2660.	1460.
.06	29.5	23.9	2.76	2.24	26.7	21.7	55.7					1620.	1010.	1700.	1640.	1620.	1010.
.08	27.9	24.0	3.27	2.81	24.7	21.2	33.7					730.	525.	788.	754.	733.	528.
.1	26.6	23.7	3.67	3.27	22.9	20.4	22.3					390.	302.	436.	414.	394.	305.
.15	24.0	22.5	4.35	4.08	19.6	18.4	10.5					126.	107.	159.	149.	130.	111.
.2	21.9	21.0	4.74	4.54	17.2	16.5	6.08					56.1	49.8	83.2	77.1	60.8	54.3
.3	19.1	18.6	5.15	5.01	13.9	13.6	2.77					18.1	16.7	39.5	36.7	23.3	21.7
.4	17.1	16.8	5.30	5.17	11.8	11.6	1.57					8.50	8.02	26.9	25.3	13.8	13.2
.5	15.6	15.4	5.33	5.22	10.3	10.2	1.02					4.78	4.56	21.2	20.2	10.1	9.78
.6	14.4	14.3	5.31	5.21	9.14	9.09	.706					3.07	2.95	18.1	17.4	8.38	8.16
.8	12.7	12.6	5.19	5.04	7.50	7.56	.400					1.56	1.52	14.6	14.2	6.75	6.56
1.	11.4	11.4	5.02	4.84	6.39	6.55	.257					.980	.958	12.6	12.4	6.00	5.80
1.5	9.27	9.24	4.58	4.43	4.68	4.81	.115	.179		.179	.0548	.460	.453	9.99	9.88	5.22	4.94
2.	7.90	7.89	4.19	3.98	3.71	3.91	.0651	.620		.620	.286	.280	.277	8.86	8.79	5.09	4.54
3.	6.22	6.21	3.59	3.31	2.63	2.90	.0291	1.58	.00217	1.58	.975	.151	.150	7.97	7.94	5.32	4.44
4.	5.19	5.19	3.15	2.85	2.04	2.34	.0164	2.50	.00893	2.51	1.71	.0993	.0987	7.82	7.80	5.76	4.66
5.	4.49	4.49	2.82	2.49	1.67	2.00	.0107	3.23	.0175	3.25	2.33	.0741	.0738	7.82	7.81	6.14	4.89
6.	3.96	3.96	2.55	2.19	1.41	1.77	.00747	3.85	.0272	3.88	2.85	.0587	.0585	7.91	7.90	6.49	5.10
8.	3.24	3.24	2.16	1.78	1.08	1.46	.00415	4.84	.0460	4.89	3.67	.0410	.0409	8.18	8.17	7.09	5.49
10.	2.76	2.76	1.89	1.46	.874	1.30	.00256	5.70	.0630	5.76	4.35	.0317	.0316	8.55	8.55	7.68	5.84
15.	2.04	2.04	1.45	1.05	.593	.985	.00116	7.40	.0990	7.50	5.44	.0199	.0199	9.56	9.56	8.97	6.51
20.	1.64	1.64	1.19	.807	.449	.833		8.60	.125	8.73	5.91	.0145	.0145	10.4	10.4	9.93	6.73
30.	1.19	1.19	.893	.521	.302	.669		10.3	.162	10.5	6.47	.00939	.00938	11.7	11.7	11.4	7.00
40.	.949	.949	.721	.370	.228	.579		11.4	.191	11.6	6.50	.00690	.00690	12.6	12.6	12.3	6.88
50.	.793	.793	.610	.281	.183	.512		12.3	.211	12.5	6.44	.00541	.00541	13.3	13.3	13.1	6.73
60.	.683	.683	.530	.220	.153	.463		13.0	.227	13.2	6.38	.00445	.00445	13.9	13.9	13.7	6.60
80.	.538	.538	.423	.149	.115	.389		14.0	.252	14.3	6.21	.00328	.00328	14.8	14.8	14.7	6.36
100.	.447	.447	.355	.109	.0922	.338		14.8	.270	15.1	6.03	.00257	.00257	15.5	15.5	15.5	6.14

54 XENON

(cm^2/g = 0.004587 x barns/atom)

E (MeV)	$(\frac{\mu}{\rho})^{KN}_{inc,t}$	$(\frac{\mu}{\rho})^{BD}_{inc,t}$	$(\frac{\mu}{\rho})^{KN}_{inc,a}$	$(\frac{\mu}{\rho})^{BD}_{inc,a}$	$(\frac{\mu}{\rho})^{KN}_{inc,s}$	$(\frac{\mu}{\rho})^{BD}_{inc,s}$	$(\frac{\mu}{\rho})_{coh}$	$(\frac{\mu}{\rho})_{\kappa_n}$	$(\frac{\mu}{\rho})_{\kappa_e}$	$(\frac{\mu}{\rho})_{\kappa,t}$	$(\frac{\mu}{\rho})_{\kappa,a}$	$(\frac{\mu}{\rho})_{\tau,t}$	$(\frac{\mu}{\rho})_{\tau,a}$	$(\frac{\mu}{\rho})_{tot,t}$	$(\frac{\mu}{\rho})_{tot,t-coh}$	$(\frac{\mu}{\rho})_{tot,a}$	$(\frac{\mu}{\rho})_{tot,en}$
.001	.164	.00450	.000320	.00000880	.164	.00449	8.44					9590.	9590.	9590.	9590.	9590.	9590.
M_I .001143	.164	.00564	.000365	.0000126	.164	.00564	8.30					8300.	8300.	8300.	8300.	8300.	8300.
												10300.	10300.	10300.	10300.	10300.	10300.
.0015	.164	.00858	.000477	.0000250	.163	.00853	7.98					5000.	5000.	5000.	5000.	5000.	5000.
.002	.163	.0129	.000633	.0000500	.163	.0128	7.52					2340.	2340.	2350.	2340.	2340.	2340.
.003	.163	.0212	.000965	.000123	.162	.0211	6.51					798.	798.	803.	798.	798.	798.
.004	.162	.0287	.00125	.000221	.161	.0285	5.69					371.	371.	377.	371.	371.	371.
L_{III} .004782	.162	.0339	.00148	.000311	.160	.0335	5.14					231.	231.	236.	231.	231.	231.
												803.	706.	807.	803.	803.	706.
.005	.161	.0352	.00155	.000337	.160	.0349	5.00					693.	615.	697.	693.	693.	615.
L_{II} .005102	.161	.0358	.00158	.000350	.160	.0354	4.91					651.	578.	656.	651.	651.	578.
												899.	798.	904.	899.	899.	798.
L_I .005445	.161	.0378	.00168	.000393	.160	.0373	4.72					766.	683.	771.	766.	766.	683.
												881.	784.	885.	881.	881.	784.
.006	.161	.0408	.00184	.000468	.159	.0404	4.41					674.	610.	679.	674.	674.	610.
.008	.160	.0505	.00242	.000766	.157	.0495	3.50					313.	290.	317.	313.	313.	290.
.01	.159	.0587	.00297	.00110	.155	.0578	2.83					169.	159.	172.	169.	169.	159.
.015	.156	.0748	.00431	.00207	.151	.0725	1.85					55.0	52.8	56.9	55.0	55.0	52.8
.02	.153	.0853	.00550	.00308	.148	.0821	1.32					24.9	24.1	26.3	25.0	24.9	24.1
.03	.148	.0977	.00771	.00509	.140	.0927	.748					7.94	7.80	8.76	8.03	7.94	7.80
K .034561	.146	.101	.00858	.00596	.137	.0954	.605					4.32	5.23	6.01	5.41	5.32	5.23
												33.0	11.5	33.7	33.1	33.0	11.5
.04	.143	.105	.00954	.00697	.134	.0977	.486					22.2	9.72	22.8	22.3	22.2	9.72
.05	.139	.108	.0112	.00872	.128	.0995	.344					12.2	6.70	12.7	12.3	12.2	6.70
.06	.135	.110	.0127	.0103	.122	.0995	.255					7.43	4.63	7.80	7.52	7.43	4.63
.08	.128	.110	.0150	.0129	.113	.0972	.155					3.35	2.41	3.61	3.46	3.36	2.42
.1	.122	.109	.0168	.0150	.105	.0936	.102					1.79	1.39	2.00	1.90	1.81	1.40
.15	.110	.103	.0200	.0187	.0899	.0844	.0482					.578	.491	.729	.683	.596	.509
.2	.100	.0963	.0217	.0208	.0789	.0757	.0279					.257	.228	.382	.354	.279	.249
.3	.0876	.0853	.0236	.0230	.0638	.0624	.0127					.0830	.0766	.181	.168	.107	.0995
.4	.0784	.0771	.0243	.0237	.0541	.0532	.00720					.0390	.0368	.123	.116	.0633	.0605
.5	.0716	.0706	.0244	.0239	.0472	.0468	.00468					.0219	.0209	.0972	.0927	.0463	.0449
.6	.0661	.0656	.0244	.0239	.0419	.0417	.00324					.0141	.0135	.0830	.0798	.0384	.0374
.8	.0583	.0578	.0238	.0231	.0344	.0347	.00183					.00716	.00697	.0670	.0651	.0310	.0301
1.	.0523	.0523	.0230	.0222	.0293	.0300	.00118					.00450	.00439	.0578	.0569	.0275	.0266
1.5	.0425	.0424	.0210	.0203	.0215	.0221	.000528	.000821		.000821	.000251	.00211	.00208	.0458	.0453	.0239	.0227
2.	.0362	.0362	.0192	.0183	.0170	.0179	.000299	.00284		.00284	.00131	.00128	.00127	.0406	.0403	.0233	.0208
3.	.0285	.0285	.0165	.0152	.0121	.0133	.000133	.00725	.00000995	.00725	.00447	.000693	.000688	.0366	.0364	.0244	.0204
4.	.0238	.0238	.0144	.0131	.00936	.0107	.0000752	.0115	.0000410	.0115	.00784	.000455	.000453	.0359	.0358	.0264	.0214
5.	.0206	.0206	.0129	.0114	.00766	.00917	.0000491	.0148	.0000803	.0149	.0107	.000340	.000339	.0359	.0358	.0282	.0224
6.	.0182	.0182	.0117	.0100	.00647	.00812	.0000343	.0177	.000125	.0178	.0131	.000269	.000268	.0363	.0362	.0298	.0234
8.	.0149	.0149	.00991	.00816	.00495	.00670	.0000190	.0222	.000211	.0224	.0168	.000188	.000188	.0375	.0375	.0325	.0252
10.	.0127	.0127	.00867	.00670	.00401	.00596	.0000117	.0261	.000289	.0264	.0200	.000145	.000145	.0392	.0392	.0352	.0268
15.	.00936	.00936	.00665	.00482	.00272	.00452	.0000053	.0339	.000454	.0344	.0250	.0000913	.0000913	.0439	.0439	.0411	.0299
20.	.00752	.00752	.00546	.00370	.00206	.00382		.0394	.000573	.0400	.0271	.0000665	.0000665	.0477	.0477	.0455	.0309
30.	.00546	.00546	.00410	.00239	.00139	.00307		.0472	.000743	.0482	.0297	.0000431	.0000430	.0537	.0537	.0523	.0321
40.	.00435	.00435	.00331	.00170	.00105	.00266		.0523	.000876	.0532	.0298	.0000317	.0000317	.0578	.0578	.0564	.0316
50.	.00364	.00364	.00280	.00129	.000839	.00235		.0564	.000968	.0573	.0295	.0000248	.0000248	.0610	.0610	.0601	.0309
60.	.00313	.00313	.00243	.00101	.000702	.00212		.0596	.00104	.0605	.0293	.0000204	.0000204	.0638	.0638	.0628	.0303
80.	.00247	.00247	.00194	.000683	.000528	.00178		.0642	.00116	.0656	.0285	.0000150	.0000150	.0679	.0679	.0674	.0292
100.	.00205	.00205	.00163	.000500	.000423	.00155		.0679	.00124	.0693	.0277	.0000118	.0000118	.0711	.0711	.0711	.0282

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(barns/atom)

E (MeV)	KN $\sigma_{inc,t}$	BD $\sigma_{inc,t}$	KN $\sigma_{inc,a}$	BD $\sigma_{inc,a}$	KN $\sigma_{inc,s}$	BD $\sigma_{inc,s}$	σ_{coh}	$\sigma_{\kappa n}$	$\sigma_{\kappa e}$	$\sigma_{\kappa,t}$	$\sigma_{\kappa,a}$	$\sigma_{\gamma,t}$	$\sigma_{\gamma,a}$	$\sigma_{tot,t}$	$\sigma_{tot,t-coh}$	$\sigma_{tot,a}$	$\sigma_{tot,en}$
.001	36.4	1.31	.0710	.00255	36.4	1.31	1880.					2070000.	2070000.	2070000.	2070000.	2070000.	2070000.
K_{II} .001065	36.4	1.43	.0756	.00297	36.4	1.43	1870.					1900000.	1900000.	1900000.	1900000.	1900000.	1900000.
K_I .001217	36.4	1.69	.0863	.00400	36.3	1.69	1840.					2270000.	2270000.	2270000.	2270000.	2270000.	2270000.
.0015	36.4	2.19	.106	.00639	36.3	2.18	1790.					1680000.	1680000.	1680000.	1680000.	1680000.	1680000.
.002	36.3	3.10	.141	.0120	36.2	3.09	1680.					2070000.	2070000.	2070000.	2070000.	2070000.	2070000.
.003	36.2	4.87	.210	.0282	36.0	4.84	1470.					1190000.	1190000.	1190000.	1190000.	1190000.	1190000.
.004	36.0	6.49	.277	.0499	35.7	6.44	1280.					554000.	554000.	556000.	554000.	554000.	554000.
.005	35.9	7.91	.344	.0758	35.5	7.83	1120.					189000.	189000.	190000.	189000.	189000.	189000.
L_{III} .005012	35.9	7.93	.345	.0761	35.5	7.85	1120.					88200.	88200.	89500.	88200.	88200.	88200.
L_{II} .005360	35.8	8.38	.367	.0859	35.5	8.29	1070.					48400.	48600.	49700.	48600.	48600.	48600.
L_I .005713	35.8	8.81	.391	.0961	35.4	8.71	1030.					48300.	48300.	49400.	48300.	48300.	48300.
.006	35.7	9.15	.409	.105	35.3	9.05	992.					165000.	145000.	166000.	165000.	165000.	145000.
.008	35.5	11.3	.537	.171	34.9	11.1	789.					133000.	118000.	134000.	133000.	133000.	118000.
.01	35.2	13.1	.660	.245	34.6	12.9	641.					184000.	162000.	185000.	184000.	184000.	162000.
.015	34.6	16.5	.956	.456	33.6	16.0	419.					157000.	140000.	158000.	157000.	157000.	140000.
.02	34.0	18.9	1.23	.682	32.8	18.2	299.					181000.	161000.	182000.	181000.	181000.	161000.
.03	32.9	21.6	1.71	1.12	31.2	20.5	170.					158000.	141000.	159000.	158000.	158000.	141000.
K .035985	32.2	22.6	1.97	1.38	30.3	21.2	130.					72900.	67100.	73700.	72900.	72900.	67100.
.04	31.8	23.1	2.12	1.54	29.7	21.6	110.					39400.	36900.	40100.	39400.	39400.	36900.
.05	30.9	23.9	2.49	1.93	28.4	22.0	78.2					13000.	12500.	13400.	13000.	13000.	12500.
.06	30.0	24.3	2.82	2.28	27.2	22.0	58.2					5850.	5660.	6170.	5870.	5850.	5660.
.08	28.4	24.4	3.33	2.86	25.1	21.5	35.3					1480.	1840.	2070.	1900.	1880.	1840.
.1	27.1	24.1	3.74	3.33	23.4	20.8	23.4					1120.	1100.	1270.	1140.	1120.	1100.
.15	24.4	22.9	4.43	4.16	20.0	18.7	11.0					6890.	2380.	7040.	6910.	6890.	2380.
.2	22.4	21.4	4.83	4.63	17.5	16.8	6.36					5190.	2130.	5320.	5210.	5190.	2130.
.3	19.4	19.0	5.24	5.12	14.2	13.9	2.89					2850.	1510.	2950.	2870.	2850.	1510.
.4	17.4	17.1	5.40	5.27	12.0	11.8	1.64					1730.	1050.	1810.	1750.	1730.	1050.
.5	15.9	15.7	5.42	5.32	10.5	10.4	1.06					780.	550.	840.	804.	783.	553.
.6	14.7	14.6	5.41	5.31	9.31	9.29	.740					419.	320.	466.	443.	423.	323.
.8	12.9	12.8	5.28	5.12	7.64	7.68	.419					135.	114.	169.	158.	139.	118.
1.	11.6	11.6	5.11	4.93	6.51	6.67	.270					60.0	52.9	87.8	81.4	64.8	57.5
1.5	9.44	9.41	4.67	4.51	4.77	4.90	.121	.187		.187	.0572	19.5	18.0	41.4	38.5	24.7	23.1
2.	8.05	8.04	4.27	4.05	3.78	3.99	.0682	.645		.645	.297	9.20	8.66	27.9	26.3	14.6	13.9
3.	6.33	6.32	3.65	3.37	2.68	2.95	.0306	1.64	.00222	1.64	1.01	5.17	4.93	21.9	20.9	10.6	10.3
4.	5.29	5.29	3.21	2.90	2.08	2.39	.0171	2.59	.00910	2.60	1.76	3.33	3.20	18.7	17.9	8.74	8.51
5.	4.57	4.57	2.87	2.53	1.70	2.04	.0111	3.36	.0178	3.38	2.42	1.70	1.65	14.9	14.5	6.98	6.77
6.	4.04	4.04	2.60	2.23	1.44	1.81	.00779	4.00	.0277	4.03	2.96	1.06	1.04	12.9	12.7	6.17	5.97
8.	3.30	3.30	2.20	1.81	1.10	1.49	.00436	5.01	.0470	5.06	3.79	.500	.492	10.2	10.1	5.36	5.06
10.	2.81	2.81	1.92	1.49	.890	1.32	.00270	5.90	.0641	5.96	4.49	.306	.302	9.06	8.99	5.22	4.65
15.	2.08	2.08	1.48	1.07	.604	1.01	.00120	7.65	.100	7.75	5.61	.165	.164	8.16	8.12	5.45	4.54
20.	1.67	1.67	1.21	.818	.457	.852		8.90	.127	9.03	6.09	.108	.107	8.02	8.00	5.92	4.77
30.	1.22	1.22	.909	.532	.307	.688		10.7	.165	10.9	6.68	.0810	.0806	8.04	8.03	6.33	5.03
40.	.967	.967	.735	.376	.232	.591		11.8	.194	12.0	6.70	.0638	.0635	8.14	8.13	6.69	5.25
50.	.807	.807	.621	.285	.186	.522		12.8	.215	13.0	6.66	.0444	.0443	8.41	8.40	7.30	5.64
60.	.695	.695	.540	.223	.156	.472		13.4	.231	13.6	6.53	.0342	.0341	8.81	8.80	7.91	6.01
80.	.548	.548	.431	.151	.117	.397		14.5	.257	14.8	6.40	.0214	.0214	9.85	9.85	9.25	6.70
100.	.455	.455	.362	.111	.0939	.344		15.3	.275	15.6	6.18	.0155	.0155	10.7	10.7	10.3	6.92
												.0101	.0101	12.1	12.1	11.8	7.22
												.00741	.00741	13.0	13.0	12.7	7.08
												.00587	.00587	13.8	13.8	13.6	6.95
												.00482	.00482	14.3	14.3	14.1	6.74
												.00354	.00354	15.4	15.4	15.2	6.55
												.00278	.00278	16.1	16.1	16.0	6.29

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(cm^2/g = 0.004531 x barns/atom)

E (MeV)	$(\frac{\mu}{\rho})^{KN}_{inc,t}$	$(\frac{\mu}{\rho})^{BD}_{inc,t}$	$(\frac{\mu}{\rho})^{KN}_{inc,a}$	$(\frac{\mu}{\rho})^{BD}_{inc,a}$	$(\frac{\mu}{\rho})^{KN}_{inc,s}$	$(\frac{\mu}{\rho})^{BD}_{inc,s}$	$(\frac{\mu}{\rho})_{coh}$	$(\frac{\mu}{\rho})_{\kappa n}$	$(\frac{\mu}{\rho})_{\kappa e}$	$(\frac{\mu}{\rho})_{\kappa,t}$	$(\frac{\mu}{\rho})_{\kappa,a}$	$(\frac{\mu}{\rho})_{\tau,t}$	$(\frac{\mu}{\rho})_{\tau,a}$	$(\frac{\mu}{\rho})_{tot,t}$	$(\frac{\mu}{\rho})_{tot,t-coh}$	$(\frac{\mu}{\rho})_{tot,a}$	$(\frac{\mu}{\rho})_{tot,en}$
.001	.165	.00594	.000322	.0000116	.165	.00594	8.52					9380.	9380.	9380.	9380.	9380.	9380.
M_{II} .001065	.165	.00648	.000343	.0000135	.165	.00648	8.47					8610.	8610.	8610.	8610.	8610.	8610.
M_{I} .001217	.165	.00766	.000391	.0000181	.164	.00766	8.34					10300.	10300.	10300.	10300.	10300.	10300.
												7610.	7610.	7610.	7610.	7610.	7610.
.0015	.165	.00992	.000480	.0000290	.164	.00988	8.11					9380.	9380.	9380.	9380.	9380.	9380.
.002	.164	.0140	.000639	.0000544	.164	.0140	7.61					5390.	5390.	5390.	5390.	5390.	5390.
.003	.164	.0221	.000952	.000128	.163	.0219	6.66					2510.	2510.	2520.	2510.	2510.	2510.
.004	.163	.0294	.00126	.000226	.162	.0292	5.80					856.	856.	861.	856.	856.	856.
.005	.163	.0358	.00156	.000343	.161	.0355	5.07					400.	400.	406.	400.	400.	400.
L_{III} .005012	.163	.0359	.00156	.000345	.161	.0356	5.07					220.	220.	225.	220.	220.	220.
												219.	219.	224.	219.	219.	219.
L_{II} .005360	.162	.0380	.00166	.000389	.161	.0376	4.85					748.	657.	752.	748.	748.	657.
												603.	535.	607.	603.	603.	535.
L_{I} .005713	.162	.0399	.00177	.000435	.160	.0395	4.67					834.	734.	838.	834.	834.	734.
												711.	634.	716.	711.	711.	634.
.006	.162	.0415	.00185	.000476	.160	.0410	4.49					820.	729.	825.	820.	820.	729.
.008	.161	.0512	.00243	.000775	.158	.0503	3.57					716.	639.	720.	716.	716.	639.
.01	.159	.0594	.00299	.00111	.157	.0584	2.90					330.	304.	334.	330.	330.	304.
.015	.157	.0748	.00433	.00207	.152	.0725	1.90					179.	167.	182.	179.	179.	167.
.02	.154	.0856	.00557	.00309	.149	.0825	1.35					58.9	56.6	60.7	58.9	58.9	56.6
.03	.149	.0979	.00775	.00507	.141	.0929	.770					26.5	25.6	28.0	26.6	26.5	25.6
K .035985	.146	.102	.00893	.00625	.137	.0961	.589					8.52	8.34	9.38	8.61	8.52	8.34
												5.07	4.98	5.75	5.17	5.07	4.98
.04	.144	.105	.00961	.00698	.135	.0979	.498					31.2	10.8	31.9	31.3	31.2	10.8
.05	.140	.108	.0113	.00874	.129	.0997	.354					23.5	9.65	24.1	23.6	23.5	9.65
.06	.136	.110	.0128	.0103	.123	.0997	.264					12.9	6.84	13.4	13.0	12.9	6.84
.08	.129	.111	.0151	.0130	.114	.0974	.160					7.84	4.76	8.20	7.93	7.84	4.76
.1	.123	.109	.0169	.0151	.106	.0942	.106					3.53	2.49	3.81	3.64	3.55	2.51
.15	.111	.104	.0201	.0188	.0906	.0847	.0498					1.90	1.45	2.11	2.01	1.92	1.46
.2	.101	.0970	.0219	.0210	.0793	.0761	.0288					.612	.517	.766	.716	.638	.535
.3	.0879	.0861	.0237	.0232	.0643	.0630	.0131					.272	.240	.398	.369	.294	.261
.4	.0788	.0775	.0245	.0239	.0544	.0535	.00743					.0884	.0816	.188	.174	.112	.105
.5	.0720	.0711	.0246	.0241	.0476	.0471	.00480					.0417	.0392	.126	.119	.0662	.0630
.6	.0666	.0662	.0245	.0241	.0422	.0421	.00335					.0234	.0223	.0992	.0947	.0480	.0467
.8	.0584	.0580	.0239	.0232	.0346	.0348	.00190					.0151	.0145	.0847	.0811	.0396	.0386
1.	.0526	.0526	.0232	.0223	.0295	.0302	.00122					.00770	.00748	.0675	.0657	.0316	.0307
1.5	.0428	.0426	.0212	.0204	.0216	.0222	.000548	.000847		.000847	.000259	.00680	.00671	.0584	.0575	.0280	.0271
2.	.0365	.0364	.0193	.0184	.0171	.0181	.000309	.00292		.00292	.00135	.00227	.00223	.0482	.0458	.0243	.0234
3.	.0287	.0286	.0165	.0153	.0121	.0134	.000139	.00743	.0000101	.00743	.00458	.00139	.00137	.0411	.0407	.0237	.0211
4.	.0240	.0240	.0145	.0131	.00942	.0108	.0000775	.0117	.0000412	.0118	.00797	.000748	.000743	.0370	.0368	.0247	.0206
5.	.0207	.0207	.0130	.0115	.00770	.00924	.0000503	.0152	.0000807	.0153	.0110	.000489	.000485	.0363	.0362	.0288	.0216
6.	.0183	.0183	.0118	.0101	.00652	.00820	.0000353	.0181	.000126	.0183	.0134	.000367	.000365	.0364	.0364	.0287	.0228
8.	.0150	.0150	.00997	.00820	.00498	.00675	.0000198	.0227	.000213	.0229	.0172	.000289	.000288	.0369	.0368	.0303	.0238
10.	.0127	.0127	.00870	.00675	.00403	.00598	.0000122	.0267	.000290	.0270	.0203	.000201	.000201	.0381	.0381	.0331	.0256
15.	.00942	.00942	.00671	.00485	.00274	.00458	.0000054	.0347	.000453	.0351	.0254	.000155	.000155	.0399	.0399	.0358	.0272
20.	.00757	.00757	.00548	.00371	.00207	.00386		.0403	.000575	.0409	.0276	.0000970	.0000970	.0446	.0446	.0419	.0304
30.	.00553	.00553	.00412	.00241	.00139	.00312		.0485	.000748	.0494	.0303	.0000702	.0000702	.0485	.0485	.0467	.0314
40.	.00438	.00438	.00333	.00170	.00105	.00268		.0535	.000879	.0544	.0304	.0000458	.0000458	.0548	.0548	.0535	.0327
50.	.00366	.00366	.00281	.00129	.000843	.00237		.0580	.000974	.0589	.0302	.0000336	.0000336	.0589	.0589	.0575	.0321
60.	.00315	.00315	.00245	.00101	.000707	.00214		.0607	.00105	.0616	.0296	.0000266	.0000266	.0625	.0625	.0616	.0315
80.	.00248	.00248	.00195	.000684	.000530	.00180		.0657	.00116	.0671	.0290	.0000218	.0000218	.0668	.0668	.0659	.0304
100.	.00206	.00206	.00164	.000503	.000425	.00156		.0693	.00125	.0707	.0280	.0000160	.0000160	.0698	.0698	.0689	.0297
												.0000126	.0000126	.0729	.0729	.0725	.0285

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(barns/atom)

E (MeV)	$\sigma^{KN}_{inc,t}$	$\sigma^{BD}_{inc,t}$	$\sigma^{KN}_{inc,a}$	$\sigma^{BD}_{inc,a}$	$\sigma^{KN}_{inc,s}$	$\sigma^{BD}_{inc,s}$	σ_{coh}	σ_{κ_n}	σ_{κ_e}	$\sigma_{\kappa,t}$	$\sigma_{\kappa,a}$	$\sigma_{\gamma,t}$	$\sigma_{\gamma,a}$	$\sigma_{tot,t}$	$\sigma_{tot,t-coh}$	$\sigma_{tot,a}$	$\sigma_{tot,en}$
.001	37.1	1.56	.0723	.00304	37.0	1.56	1940.					2220000.	2220000.	2220000.	2220000.	2220000.	2220000.
M_{III} .001061	37.1	1.67	.0767	.00345	37.0	1.67	1930.					1930000.	1930000.	1930000.	1930000.	1930000.	1930000.
												2220000.	2220000.	2220000.	2220000.	2220000.	2220000.
M_{II} .001135	37.1	1.81	.0820	.00400	37.0	1.81	1910.					1760000.	1760000.	1760000.	1760000.	1760000.	1760000.
												2100000.	2100000.	2100000.	2100000.	2100000.	2100000.
M_{I} .001291	37.1	2.11	.0931	.00530	37.0	2.10	1880.					1560000.	1560000.	1560000.	1560000.	1560000.	1560000.
												1930000.	1930000.	1930000.	1930000.	1930000.	1930000.
.0015	37.0	2.50	.108	.00729	36.9	2.49	1830.					1290000.	1290000.	1290000.	1290000.	1290000.	1290000.
.002	37.0	3.40	.143	.0132	36.8	3.39	1720.					603000.	603000.	605000.	603000.	603000.	603000.
.003	36.8	5.14	.213	.0298	36.6	5.11	1510.					203000.	203000.	205000.	203000.	203000.	203000.
.004	36.7	6.75	.282	.0519	36.4	6.70	1320.					95200.	95200.	96500.	95200.	95200.	95200.
.005	36.5	8.17	.350	.0783	36.2	8.09	1160.					52400.	52400.	53600.	52400.	52400.	52400.
L_{III} .005247	36.5	8.50	.367	.0853	36.1	8.41	1120.					46300.	46300.	47400.	46300.	46300.	46300.
												156000.	136000.	157000.	156000.	156000.	136000.
L_{II} .005623	36.5	8.97	.392	.0963	36.1	8.87	1070.					126000.	111000.	127000.	126000.	126000.	111000.
												174000.	153000.	175000.	174000.	174000.	153000.
L_{I} .005987	36.4	9.41	.416	.107	36.0	9.30	1020.					148000.	131000.	149000.	148000.	148000.	131000.
												171000.	152000.	172000.	171000.	171000.	152000.
.006	36.4	9.42	.417	.108	36.0	9.31	1020.					169000.	150000.	170000.	169000.	169000.	150000.
.008	36.1	11.5	.547	.174	35.6	11.3	816.					78100.	71400.	78900.	78100.	78100.	71400.
.01	35.9	13.3	.672	.249	35.2	13.1	664.					42400.	39500.	43100.	42400.	42400.	39500.
.015	35.2	16.8	.974	.465	34.2	16.3	434.					13900.	13300.	14400.	13900.	13900.	13300.
.02	34.6	19.2	1.25	.693	33.4	18.5	311.					6330.	6110.	6660.	6350.	6330.	6110.
.03	33.5	22.0	1.74	1.14	31.7	20.9	178.					2040.	1990.	2240.	2060.	2040.	1990.
K .037441	32.7	23.2	2.06	1.47	30.6	21.7	127.					1090.	1070.	1240.	1110.	1090.	1070.
												6590.	2250.	6740.	6610.	6590.	2250.
.04	32.4	23.5	2.16	1.57	30.2	21.9	115.					5500.	2110.	5640.	5520.	5500.	2110.
.05	31.4	24.3	2.54	1.96	28.9	22.3	81.5					3020.	1530.	3130.	3040.	3020.	1530.
.06	30.6	24.7	2.87	2.32	27.7	22.4	60.8					1850.	1090.	1940.	1870.	1850.	1090.
.08	29.0	24.8	3.39	2.90	25.6	21.9	36.8					839.	580.	901.	864.	842.	583.
.1	27.6	24.5	3.81	3.38	23.8	21.1	24.4					480.	339.	499.	474.	454.	342.
.15	24.8	23.2	4.51	4.21	20.3	19.0	11.5					145.	121.	180.	168.	150.	125.
.2	22.8	21.8	4.92	4.71	17.8	17.1	6.65					65.0	57.0	93.4	86.8	69.9	61.7
.3	19.8	19.3	5.34	5.20	14.5	14.1	3.02					21.1	19.4	43.4	40.4	26.4	24.6
.4	17.7	17.4	5.49	5.36	12.2	12.0	1.71					9.93	9.32	29.0	27.3	15.4	14.7
.5	16.2	16.0	5.52	5.42	10.7	10.6	1.11					5.58	5.30	22.7	21.6	11.1	10.7
.6	15.0	14.8	5.50	5.39	9.48	9.41	.774					3.61	3.46	19.2	18.4	9.11	8.85
.8	13.2	13.1	5.38	5.24	7.78	7.86	.439					1.83	1.77	15.4	14.9	7.21	7.01
1.	11.8	11.8	5.20	5.00	6.62	6.80	.281					1.15	1.12	13.2	12.9	6.35	6.17
1.5	9.61	9.58	4.75	4.59	4.86	4.99	.127	.197		.197	.0601	.540	.531	10.4	10.3	5.49	5.18
2.	8.19	8.18	4.35	4.12	3.85	4.06	.0713	.673		.673	.310	.330	.326	9.25	9.18	5.35	4.76
3.	6.45	6.44	3.72	3.43	2.72	3.01	.0320	1.71	.00226	1.71	1.05	.180	.179	8.36	8.33	5.61	4.66
4.	5.39	5.39	3.27	2.95	2.12	2.44	.0179	2.68	.00927	2.69	1.82	.118	.117	8.22	8.20	6.08	4.89
5.	4.65	4.65	2.92	2.57	1.73	2.08	.0116	3.49	.0182	3.51	2.50	.0877	.0873	8.26	8.25	6.52	5.16
6.	4.11	4.11	2.65	2.26	1.46	1.85	.00812	4.13	.0282	4.16	3.05	.0690	.0687	8.35	8.34	6.88	5.38
8.	3.36	3.36	2.24	1.83	1.12	1.53	.00458	5.20	.0478	5.25	3.92	.0483	.0482	8.66	8.66	7.54	5.80
10.	2.86	2.86	1.96	1.51	.907	1.35	.00284	6.10	.0653	6.17	4.63	.0372	.0371	9.07	9.07	8.17	6.18
15.	2.12	2.12	1.51	1.09	.615	1.03	.00125	7.90	.102	8.00	5.78	.0233	.0233	10.1	10.1	9.53	6.89
20.	1.70	1.70	1.24	.831	.465	.869		9.25	.129	9.38	6.33	.0169	.0169	11.1	11.1	10.6	7.18
30.	1.24	1.24	.926	.538	.313	.702		11.0	.168	11.2	6.86	.0109	.0109	12.5	12.5	12.1	7.41
40.	.984	.984	.748	.381	.236	.603		12.2	.197	12.4	6.88	.00800	.00800	13.4	13.4	13.2	7.27
50.	.822	.822	.633	.289	.189	.533		13.2	.218	13.4	6.84	.00632	.00632	14.2	14.2	14.0	7.14
60.	.708	.708	.549	.226	.158	.482		13.9	.236	14.1	6.73	.00520	.00520	14.8	14.8	14.7	6.96
80.	.558	.558	.439	.153	.119	.405		15.0	.262	15.3	6.58	.00383	.00383	15.9	15.9	15.7	6.74
100.	.464	.464	.368	.112	.0956	.352		15.8	.280	16.1	6.35	.00300	.00300	16.6	16.6	16.5	6.46

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(cm²/g = 0.004385 × barns/atom)

E (MeV)	$(\frac{\mu}{\rho})^{KN}_{inc,t}$	$(\frac{\mu}{\rho})^{BD}_{inc,t}$	$(\frac{\mu}{\rho})^{KN}_{inc,a}$	$(\frac{\mu}{\rho})^{BD}_{inc,a}$	$(\frac{\mu}{\rho})^{KN}_{inc,s}$	$(\frac{\mu}{\rho})^{BD}_{inc,s}$	$(\frac{\mu}{\rho})_{coh}$	$(\frac{\mu}{\rho})_{\kappa n}$	$(\frac{\mu}{\rho})_{\kappa e}$	$(\frac{\mu}{\rho})_{\kappa,t}$	$(\frac{\mu}{\rho})_{\kappa,a}$	$(\frac{\mu}{\rho})_{\tau,t}$	$(\frac{\mu}{\rho})_{\tau,a}$	$(\frac{\mu}{\rho})_{tot,t}$	$(\frac{\mu}{\rho})_{tot,t-coh}$	$(\frac{\mu}{\rho})_{tot,a}$	$(\frac{\mu}{\rho})_{tot,en}$
.001	.163	.00684	.000317	.0000133	.162	.00684	8.51					9730.	9730.	9730.	9730.	9730.	9730.
M_{III} .001061	.163	.00732	.000336	.0000151	.162	.00732	8.46					8460.	8460.	8460.	8460.	8460.	8460.
												9730.	9730.	9730.	9730.	9730.	9730.
M_{II} .001135	.163	.00794	.000360	.0000175	.162	.00794	8.38					7720.	7720.	7720.	7720.	7720.	7720.
												9210.	9210.	9210.	9210.	9210.	9210.
M_{I} .001291	.163	.00925	.000408	.0000232	.162	.00921	8.24					6840.	6840.	6840.	6840.	6840.	6840.
												8460.	8460.	8460.	8460.	8460.	8460.
.0015	.162	.0110	.000474	.0000320	.162	.0109	8.02					5660.	5660.	5660.	5660.	5660.	5660.
.002	.162	.0149	.000627	.0000579	.161	.0149	7.56					2640.	2640.	2650.	2640.	2640.	2640.
.003	.161	.0225	.000934	.000131	.160	.0224	6.62					890.	890.	899.	890.	890.	890.
.004	.161	.0296	.00124	.000228	.160	.0294	5.79					417.	417.	423.	417.	417.	417.
.005	.160	.0358	.00153	.000343	.159	.0355	5.09					230.	230.	235.	230.	230.	230.
L_{III} .005247	.160	.0373	.00161	.000374	.158	.0369	4.91					203.	203.	208.	203.	203.	203.
												684.	596.	688.	684.	684.	596.
L_{II} .005623	.160	.0393	.00172	.000422	.158	.0389	4.69					553.	487.	557.	553.	553.	487.
												763.	671.	767.	763.	763.	671.
L_{I} .005987	.160	.0413	.00182	.000469	.158	.0408	4.47					649.	574.	653.	649.	649.	574.
												750.	667.	754.	750.	750.	667.
.006	.160	.0413	.00183	.000474	.158	.0408	4.47					741.	658.	745.	741.	741.	658.
.008	.158	.0504	.00240	.000763	.156	.0496	3.58					342.	313.	346.	342.	342.	313.
.01	.157	.0583	.00295	.00109	.154	.0574	2.91					186.	173.	189.	186.	186.	173.
.015	.154	.0737	.00427	.00204	.150	.0715	1.90					61.0	58.3	63.1	61.0	61.0	58.3
.02	.152	.0842	.00548	.00304	.146	.0811	1.36					27.8	26.8	29.2	27.8	27.8	26.8
.03	.147	.0965	.00763	.00500	.139	.0916	.781					8.95	8.73	9.82	9.03	8.95	8.73
K .037441	.143	.102	.00903	.00645	.134	.0952	.557					4.78	4.69	5.44	4.87	4.78	4.69
												28.9	9.87	29.6	29.0	28.9	9.87
.04	.142	.103	.00947	.00688	.132	.0960	.504					24.1	9.25	24.7	24.2	24.1	9.25
.05	.138	.107	.0111	.00859	.127	.0978	.357					13.2	6.71	13.7	13.3	13.2	6.71
.06	.134	.108	.0126	.0102	.121	.0982	.267					8.11	4.78	8.51	8.20	8.11	4.78
.08	.127	.109	.0149	.0127	.112	.0960	.161					3.68	2.54	3.95	3.79	3.69	2.56
.1	.121	.107	.0167	.0148	.104	.0925	.107					1.97	1.49	2.19	2.08	1.99	1.38
.15	.109	.102	.0198	.0185	.0890	.0833	.0504					.636	.531	.789	.737	.658	.548
.2	.100	.0956	.0216	.0207	.0781	.0750	.0292					.285	.250	.410	.381	.307	.271
.3	.0868	.0846	.0234	.0228	.0636	.0618	.0132					.0925	.0851	.190	.177	.116	.108
.4	.0776	.0763	.0241	.0235	.0535	.0526	.00750					.0435	.0409	.127	.120	.0675	.0645
.5	.0710	.0702	.0242	.0238	.0469	.0465	.00487					.0245	.0232	.0995	.0947	.0487	.0469
.6	.0658	.0649	.0241	.0236	.0416	.0413	.00339					.0158	.0152	.0842	.0807	.0399	.0388
.8	.0579	.0574	.0236	.0230	.0341	.0346	.00193					.00802	.00776	.0675	.0653	.0316	.0307
1.	.0517	.0517	.0228	.0219	.0290	.0298	.00123					.00504	.00491	.0570	.0566	.0278	.0268
1.5	.0421	.0420	.0208	.0201	.0213	.0219	.000557	.000864		.000864	.000264	.00237	.00233	.0456	.0452	.0241	.0227
2.	.0359	.0359	.0191	.0181	.0169	.0178	.000313	.00295		.00295	.00136	.00145	.00143	.0406	.0403	.0235	.0209
3.	.0283	.0282	.0163	.0150	.0119	.0132	.000140	.00750	.00000991	.00750	.00460	.000789	.000785	.0367	.0365	.0246	.0204
4.	.0236	.0236	.0143	.0129	.00930	.0107	.0000785	.0118	.0000406	.0118	.00798	.000517	.000513	.0360	.0360	.0267	.0214
5.	.0204	.0204	.0128	.0113	.00759	.00912	.0000509	.0153	.0000798	.0154	.0110	.000385	.000383	.0362	.0362	.0286	.0226
6.	.0180	.0180	.0116	.00991	.00640	.00811	.0000356	.0181	.000124	.0182	.0134	.000303	.000301	.0366	.0366	.0302	.0236
8.	.0147	.0147	.00982	.00802	.00491	.00671	.0000201	.0228	.000210	.0230	.0172	.000212	.000211	.0380	.0380	.0331	.0254
10.	.0125	.0125	.00859	.00662	.00398	.00592	.0000125	.0267	.000286	.0271	.0203	.000163	.000163	.0398	.0398	.0358	.0271
15.	.00930	.00930	.00662	.00478	.00270	.00452	.0000055	.0346	.000447	.0351	.0253	.000102	.000102	.0443	.0443	.0418	.0302
20.	.00745	.00745	.00544	.00364	.00204	.00381		.0406	.000566	.0411	.0278	.0000741	.0000741	.0487	.0487	.0465	.0315
30.	.00544	.00544	.00406	.00236	.00137	.00308		.0482	.000737	.0491	.0301	.0000478	.0000478	.0548	.0548	.0531	.0325
40.	.00431	.00431	.00328	.00167	.00103	.00264		.0535	.000864	.0544	.0302	.0000351	.0000351	.0588	.0588	.0579	.0319
50.	.00360	.00360	.00278	.00127	.000829	.00234		.0579	.000956	.0588	.0300	.0000277	.0000277	.0623	.0623	.0614	.0313
60.	.00310	.00310	.00241	.000991	.000693	.00211		.0610	.00103	.0618	.0295	.0000228	.0000228	.0660	.0660	.0645	.0305
80.	.00245	.00245	.00193	.000671	.000522	.00178		.0658	.00115	.0671	.0289	.0000168	.0000168	.0697	.0697	.0688	.0296
100.	.00203	.00203	.00161	.000491	.000419	.00154		.0693	.00123	.0706	.0278	.0000132	.0000132	.0728	.0728	.0724	.0283

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(barns/atom)

E (MeV)	KN $\sigma_{inc,t}$	BD $\sigma_{inc,t}$	KN $\sigma_{inc,a}$	BD $\sigma_{inc,a}$	KN $\sigma_{inc,s}$	BD $\sigma_{inc,s}$	σ_{coh}	σ_{xn}	σ_{xe}	$\sigma_{x,t}$	$\sigma_{x,a}$	$\sigma_{r,t}$	$\sigma_{r,a}$	$\sigma_{tot,t}$	$\sigma_{tot,t-coh}$	$\sigma_{tot,a}$	$\sigma_{tot,en}$
.001	37.8	1.60	.0736	.00312	37.7	1.60	2010.					2330000.	2330000.	2330000.	2330000.	2330000.	2330000.
M_{III} .001124	37.7	1.84	.0826	.00403	37.7	1.84	1980.					1800000.	1800000.	1800000.	1800000.	1800000.	1800000.
M_{II} .001204	37.7	2.00	.0885	.00469	37.6	2.08	1970.					2070000.	2070000.	2070000.	2070000.	2070000.	2070000.
M_{I} .001363	37.7	2.31	.100	.00613	37.6	2.30	1930.					1640000.	1640000.	1640000.	1640000.	1640000.	1640000.
												1950000.	1950000.	1950000.	1950000.	1950000.	1950000.
												1470000.	1470000.	1470000.	1470000.	1470000.	1470000.
												1800000.	1800000.	1800000.	1800000.	1800000.	1800000.
.0015	37.7	2.57	.110	.0075	37.6	2.56	1900.					1390000.	1390000.	1390000.	1390000.	1390000.	1390000.
.002	37.6	3.50	.146	.0136	37.5	3.49	1780.					650000.	650000.	652000.	650000.	650000.	650000.
.003	37.5	5.24	.217	.0304	37.3	5.21	1550.					219000.	219000.	221000.	219000.	219000.	219000.
.004	37.3	6.87	.287	.0529	37.0	6.82	1360.					102000.	102000.	103000.	102000.	102000.	102000.
.005	37.2	8.31	.356	.0796	36.8	8.23	1190.					56800.	56800.	58000.	56800.	56800.	56800.
L_{III} .005484	37.1	8.94	.389	.0937	36.7	8.85	1120.					44500.	44500.	45600.	44500.	44500.	44500.
												148000.	129000.	149000.	148000.	148000.	129000.
L_{II} .005891	37.1	9.43	.417	.106	36.6	9.32	1070.					119000.	105000.	120000.	119000.	119000.	105000.
												164000.	144000.	165000.	164000.	164000.	144000.
.006	37.0	9.55	.424	.109	36.6	9.44	1060.					156000.	137000.	157000.	156000.	156000.	137000.
L_{I} .006266	37.0	9.86	.442	.118	36.6	9.74	1020.					140000.	124000.	141000.	140000.	140000.	124000.
												162000.	143000.	163000.	162000.	162000.	143000.
.008	36.8	11.7	.557	.177	36.2	11.5	844.					83600.	75800.	84500.	83600.	83600.	75800.
.01	36.5	13.5	.684	.253	35.8	13.2	688.					45600.	42200.	46300.	45600.	45600.	42200.
.015	35.8	17.0	.991	.470	34.9	16.5	450.					15000.	14300.	15500.	15000.	15000.	14300.
.02	35.2	19.4	1.27	.700	34.0	18.7	322.					6780.	6530.	7120.	6800.	6780.	6530.
.03	34.1	22.3	1.77	1.16	32.3	21.1	185.					2200.	2150.	2410.	2220.	2200.	2150.
K .038925	33.1	23.7	2.16	1.55	30.9	22.2	125.					1050.	1030.	1200.	1070.	1050.	1030.
												6310.	2140.	6460.	6330.	6310.	2140.
.04	33.0	23.8	2.20	1.59	30.8	22.2	120.					5880.	2090.	6020.	5900.	5880.	2090.
.05	32.0	24.7	2.58	1.99	29.4	22.7	84.9					3210.	1560.	3320.	3230.	3210.	1560.
.06	31.1	25.1	2.92	2.36	28.2	22.7	63.4					1960.	1120.	2050.	1990.	1960.	1120.
.08	29.5	25.2	3.45	2.95	26.0	22.2	38.5					894.	606.	958.	919.	897.	609.
.1	28.1	24.9	3.88	3.44	24.2	21.5	25.5					480.	356.	530.	505.	484.	359.
.15	25.3	23.6	4.59	4.28	20.7	19.3	12.0					155.	128.	181.	179.	160.	132.
.2	23.2	22.1	5.01	4.78	18.2	17.3	6.95					70.0	61.0	99.0	92.1	75.8	65.8
.3	20.1	19.4	5.43	5.28	14.7	14.3	3.16					22.7	20.8	45.5	42.3	28.1	26.1
.4	18.0	17.8	5.59	5.48	12.5	12.3	1.79					10.7	10.0	30.3	28.5	16.3	15.5
.5	16.5	16.3	5.62	5.51	10.9	10.8	1.16					6.03	5.72	23.5	22.3	11.6	11.2
.6	15.2	15.1	5.60	5.48	9.64	9.62	.810					3.90	3.73	19.8	19.0	9.50	9.21
.8	13.4	13.3	5.48	5.32	7.92	7.98	.459					1.99	1.93	15.7	15.3	7.47	7.25
1.	12.0	12.0	5.30	5.09	6.74	6.91	.296					1.25	1.22	13.5	13.2	6.55	6.31
1.5	9.78	9.76	4.84	4.68	4.94	5.08	.133	.205		.205	.0625	.587	.577	10.7	10.6	5.63	5.32
2.	8.34	8.33	4.43	4.19	3.91	4.14	.0750	.702		.702	.324	.359	.354	9.47	9.39	5.49	4.87
3.	6.56	6.55	3.78	3.48	2.77	3.07	.0334	1.78	.00230	1.78	1.09	.194	.192	8.56	8.52	5.75	4.76
4.	5.48	5.48	3.33	3.00	2.16	2.48	.0187	2.78	.00943	2.79	1.89	.128	.127	8.42	8.40	6.25	5.02
5.	4.74	4.74	2.97	2.61	1.76	2.13	.0121	3.60	.0185	3.62	2.58	.0950	.0945	8.47	8.45	6.69	5.28
6.	4.18	4.18	2.69	2.29	1.49	1.89	.00847	4.28	.0287	4.31	3.16	.0752	.0749	8.57	8.57	7.08	5.52
8.	3.42	3.42	2.28	1.86	1.14	1.56	.00480	5.37	.0486	5.42	4.04	.0523	.0521	8.90	8.89	7.75	5.95
10.	2.92	2.92	1.99	1.53	.923	1.39	.00299	6.30	.0666	6.37	4.77	.0402	.0401	9.33	9.33	8.40	6.34
15.	2.16	2.16	1.53	1.10	.626	1.06	.00129	8.17	.104	8.27	5.94	.0250	.0250	10.5	10.5	9.82	7.04
20.	1.73	1.73	1.26	.843	.474	.887		9.52	.131	9.65	6.50	.0182	.0182	11.4	11.4	10.9	7.34
30.	1.26	1.26	.942	.543	.319	.717		11.3	.172	11.5	7.00	.0118	.0118	12.8	12.8	12.5	7.55
40.	1.00	1.00	.762	.385	.241	.615		12.6	.200	12.8	7.07	.00868	.00867	13.8	13.8	13.6	7.46
50.	.837	.837	.644	.293	.193	.544		13.7	.222	13.9	7.06	.00681	.00681	14.7	14.7	14.6	7.36
60.	.720	.720	.559	.228	.161	.492		14.3	.239	14.5	6.88	.00557	.00557	15.2	15.2	15.1	7.11
80.	.568	.568	.447	.155	.121	.413		15.5	.265	15.8	6.75	.00410	.00410	16.4	16.4	16.3	6.91
100.	.472	.472	.375	.114	.0973	.358		16.3	.285	16.6	6.50	.00323	.00323	17.1	17.1	17.0	6.62

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(cm^2/g = 0.004336 x barns/atom)

E (MeV)	$(\frac{\mu}{\rho})^{KN}_{inc,t}$	$(\frac{\mu}{\rho})^{BD}_{inc,t}$	$(\frac{\mu}{\rho})^{KN}_{inc,a}$	$(\frac{\mu}{\rho})^{BD}_{inc,a}$	$(\frac{\mu}{\rho})^{KN}_{inc,s}$	$(\frac{\mu}{\rho})^{BD}_{inc,s}$	$(\frac{\mu}{\rho})_{coh}$	$(\frac{\mu}{\rho})_{\kappa_n}$	$(\frac{\mu}{\rho})_{\kappa_e}$	$(\frac{\mu}{\rho})_{\kappa,t}$	$(\frac{\mu}{\rho})_{\kappa,a}$	$(\frac{\mu}{\rho})_{\tau,t}$	$(\frac{\mu}{\rho})_{\tau,a}$	$(\frac{\mu}{\rho})_{tot,t}$	$(\frac{\mu}{\rho})_{tot,t-coh}$	$(\frac{\mu}{\rho})_{tot,a}$	$(\frac{\mu}{\rho})_{tot,en}$
.001	.164	.00694	.000319	.0000135	.163	.00694	8.72					10100.	10100.	10100.	10100.	10100.	10100.
M_{III} .001124	.163	.00798	.000358	.0000175	.163	.00798	8.59					7800.	7800.	7800.	7800.	7800.	7800.
M_{II} .001204	.163	.00867	.000384	.0000203	.163	.00867	8.54					8980.	8980.	8980.	8980.	8980.	8980.
M_{I} .001363	.163	.0100	.000434	.0000266	.163	.00997	8.37					7110.	7110.	7110.	7110.	7110.	7110.
												8460.	8460.	8460.	8460.	8460.	8460.
.0015	.163	.0111	.000477	.0000325	.163	.0111	8.24					6370.	6370.	6370.	6370.	6370.	6370.
.002	.163	.0152	.000633	.0000590	.163	.0151	7.72					7800.	7800.	7800.	7800.	7800.	7800.
.003	.163	.0227	.000941	.0001132	.162	.0226	6.72					6030.	6030.	6030.	6030.	6030.	6030.
.004	.162	.0298	.00124	.0002229	.160	.0296	5.90					2820.	2820.	2830.	2820.	2820.	2820.
.005	.161	.0360	.00154	.0003345	.160	.0357	5.16					950.	950.	958.	950.	950.	950.
L_{III} .005484	.161	.0388	.00169	.0004406	.159	.0384	4.86					442.	442.	447.	442.	442.	442.
												246.	246.	251.	246.	246.	246.
L_{II} .005891	.161	.0409	.00181	.0004460	.159	.0404	4.64					193.	193.	198.	193.	193.	193.
												642.	559.	646.	642.	642.	559.
.006	.160	.0414	.00184	.0004473	.159	.0409	4.60					516.	456.	520.	516.	516.	455.
L_{I} .006266	.160	.0428	.00192	.0005112	.159	.0422	4.42					711.	624.	715.	711.	711.	624.
												676.	594.	681.	676.	676.	594.
.008	.160	.0507	.00242	.0007677	.157	.0499	3.66					607.	538.	611.	607.	607.	538.
.01	.158	.0585	.00297	.00110	.155	.0572	2.98					702.	620.	707.	702.	702.	628.
.015	.155	.0737	.00430	.00204	.151	.0715	1.95					362.	329.	366.	362.	362.	329.
.02	.153	.0841	.00551	.00304	.147	.0811	1.40					198.	183.	201.	198.	198.	181.
.03	.148	.0967	.00767	.00503	.140	.0915	.802					68.0	62.0	67.2	65.0	65.0	62.0
K .038925	.144	.103	.00937	.00672	.134	.0963	.542					29.4	28.3	30.9	29.5	29.4	28.3
												9.54	9.32	10.4	9.63	9.54	9.32
.04	.143	.103	.00954	.00689	.134	.0963	.520					4.55	4.47	5.20	4.64	4.55	4.47
.05	.139	.107	.0112	.00863	.127	.0984	.368					27.4	9.28	28.0	27.4	27.4	9.28
.06	.135	.109	.0127	.0102	.122	.0986	.275					25.5	9.06	26.1	25.6	25.5	9.06
.08	.128	.109	.0150	.0128	.113	.0963	.167					13.9	6.76	14.4	14.0	13.9	6.76
.1	.122	.108	.0168	.0149	.105	.0932	.111					6.50	4.86	8.89	8.63	8.50	4.86
.15	.110	.102	.0199	.0186	.0898	.0837	.0520					3.88	2.63	4.15	3.98	3.89	2.64
.2	.101	.0958	.0217	.0207	.0789	.0750	.0301					2.08	1.54	2.30	2.19	2.10	1.56
.3	.0872	.0850	.0235	.0229	.0637	.0620	.0137					.672	.555	.828	.776	.694	.572
.4	.0780	.0772	.0242	.0238	.0542	.0533	.00776					.304	.264	.429	.399	.325	.285
.5	.0715	.0707	.0244	.0239	.0473	.0468	.00503					.0984	.0902	.197	.183	.122	.113
.6	.0659	.0655	.0243	.0238	.0418	.0417	.00351					.0464	.0434	.131	.124	.0707	.0672
.8	.0581	.0577	.0238	.0231	.0343	.0346	.00199					.0261	.0248	.102	.0967	.0503	.0486
1.	.0520	.0520	.0230	.0221	.0292	.0300	.00128					.0169	.0162	.0859	.0824	.0412	.0399
1.5	.0424	.0423	.0210	.0203	.0214	.0220	.000577	.000889		.000889	.000271	.00863	.00837	.0681	.0663	.0324	.0314
2.	.0362	.0361	.0192	.0182	.0170	.0180	.000325	.00304		.00304	.00140	.00542	.00529	.0585	.0572	.0284	.0274
3.	.0284	.0284	.0164	.0151	.0120	.0133	.000145	.00772	.00000997	.00772	.00473	.00255	.00250	.0464	.0460	.0244	.0231
4.	.0238	.0238	.0144	.0130	.00937	.0108	.0000811	.0121	.0000409	.0121	.00820	.00156	.00153	.0411	.0407	.0238	.0211
5.	.0206	.0206	.0129	.0113	.00763	.00924	.0000525	.0156	.0000802	.0157	.0112	.000841	.000833	.0371	.0369	.0249	.0206
6.	.0181	.0181	.0117	.00993	.00646	.00820	.0000367	.0186	.000124	.0187	.0137	.000555	.000551	.0365	.0364	.0271	.0218
8.	.0148	.0148	.00989	.00806	.00494	.00676	.0000208	.0233	.000211	.0235	.0175	.000412	.000410	.0367	.0366	.0290	.0229
10.	.0127	.0127	.00863	.00663	.00400	.00603	.0000130	.0273	.000289	.0276	.0207	.000326	.000325	.0372	.0372	.0307	.0239
15.	.00937	.00937	.00663	.00477	.00271	.00460	.0000056	.0354	.000451	.0359	.0258	.000227	.000226	.0386	.0385	.0336	.0258
20.	.00750	.00750	.00546	.00366	.00206	.00385		.0413	.000568	.0418	.0282	.000174	.000174	.0405	.0405	.0364	.0275
30.	.00546	.00546	.00408	.00235	.00138	.00311		.0490	.000746	.0499	.0304	.000108	.000108	.0455	.0455	.0426	.0306
40.	.00434	.00434	.00330	.00167	.00104	.00267		.0546	.000867	.0555	.0307	.00007A9	.0000789	.0494	.0494	.0473	.0319
50.	.00363	.00363	.00279	.00127	.000837	.00236		.0594	.000963	.0603	.0306	.0000512	.0000512	.0555	.0555	.0542	.0327
60.	.00312	.00312	.00242	.000989	.000698	.00213		.0620	.00104	.0629	.0298	.0000376	.0000376	.0598	.0598	.0590	.0323
80.	.00246	.00246	.00194	.000672	.000525	.00179		.0672	.00115	.0685	.0293	.0000295	.0000295	.0637	.0637	.0633	.0319
100.	.00205	.00205	.00163	.000494	.000422	.00155		.0707	.00124	.0720	.0282	.0000242	.0000242	.0659	.0659	.0655	.0308
												.0000178	.0000178	.0711	.0711	.0707	.0300
												.0000140	.0000140	.0741	.0741	.0737	.0287

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(barns/atom)

E (MeV)	$\sigma^{KN}_{inc,t}$	$\sigma^{BD}_{inc,t}$	$\sigma^{KN}_{inc,a}$	$\sigma^{BD}_{inc,a}$	$\sigma^{KN}_{inc,e}$	$\sigma^{BD}_{inc,s}$	σ_{coh}	σ_{κ_n}	σ_{κ_e}	$\sigma_{\kappa,t}$	$\sigma_{\kappa,a}$	$\sigma_{\gamma,t}$	$\sigma_{\gamma,a}$	$\sigma_{tot,t}$	$\sigma_{tot,t-coh}$	$\sigma_{tot,a}$	$\sigma_{tot,en}$
.001	38.4	1.60	.0749	.00312	38.4	1.60	2090.					2540000.	2540000.	2540000.	2540000.	2540000.	2540000.
M_{III} .001185	38.4	1.97	.0886	.00454	38.3	1.97	2050.					1690000.	1690000.	1690000.	1690000.	1690000.	1690000.
M_{II} .001273	38.4	2.14	.0951	.00530	38.3	2.13	2030.					1950000.	1950000.	1950000.	1950000.	1950000.	1950000.
M_{I} .001435	38.4	2.46	.107	.00687	38.3	2.45	1990.					1540000.	1540000.	1540000.	1540000.	1540000.	1540000.
												1830000.	1830000.	1830000.	1830000.	1830000.	1830000.
												1390000.	1390000.	1390000.	1390000.	1390000.	1390000.
												1700000.	1700000.	1700000.	1700000.	1700000.	1700000.
.0015	38.4	2.58	.112	.00753	38.2	2.57	1980.					1510000.	1510000.	1510000.	1510000.	1510000.	1510000.
.002	38.3	3.53	.149	.0137	38.1	3.52	1860.					702000.	702000.	704000.	702000.	702000.	702000.
.003	38.1	5.29	.221	.0307	37.9	5.26	1640.					238000.	238000.	240000.	238000.	238000.	238000.
.004	38.0	6.93	.292	.0533	37.7	6.88	1430.					111000.	111000.	112000.	111000.	111000.	111000.
.005	37.8	8.37	.362	.0802	37.5	8.29	1260.					61400.	61400.	62700.	61400.	61400.	61400.
L_{III} .005723	37.7	9.29	.413	.102	37.3	9.19	1150.					42900.	42900.	44100.	42900.	42900.	42900.
												141000.	122000.	142000.	141000.	141000.	122000.
.006	37.7	9.61	.432	.110	37.3	9.50	1120.					122000.	106000.	123000.	122000.	122000.	106000.
L_{II} .006164	37.7	9.80	.443	.115	37.2	9.68	1090.					112000.	98100.	113000.	112000.	112000.	98100.
												155000.	135000.	156000.	155000.	155000.	135000.
L_{I} .006549	37.6	10.2	.469	.127	37.2	10.1	1050.					133000.	117000.	134000.	133000.	133000.	117000.
												153000.	135000.	154000.	153000.	153000.	135000.
												89100.	80300.	90000.	89100.	89100.	80380.
.008	37.4	11.7	.566	.177	36.9	11.5	889.					48600.	44800.	49300.	48600.	48600.	44800.
.01	37.1	13.6	.696	.255	36.5	13.3	723.					16000.	15200.	16500.	16000.	16000.	15200.
.015	36.5	17.1	1.01	.473	35.5	16.6	471.					7270.	6980.	7630.	7290.	7270.	6980.
.02	35.8	19.6	1.29	.707	34.6	18.9	337.					2360.	2300.	2580.	2380.	2360.	2300.
.03	34.6	22.6	1.80	1.18	32.9	21.4	194.					1050.	1030.	1200.	1070.	1050.	1030.
.04	33.6	24.2	2.24	1.61	31.3	22.6	125.					1020.	1000.	1170.	1040.	1020.	1000.
K .040443	33.5	24.2	2.26	1.63	31.3	22.6	123.					6050.	2030.	6200.	6070.	6040.	2030.
												3400.	1570.	3510.	3420.	3400.	1570.
.05	32.6	25.0	2.63	2.02	29.9	23.0	88.8					2080.	1150.	2170.	2110.	2080.	1150.
.06	31.6	25.5	2.97	2.39	28.7	23.1	66.3					953.	633.	1020.	979.	957.	636.
.08	30.0	25.6	3.51	3.00	26.5	22.6	40.2					512.	374.	564.	537.	516.	377.
.1	28.6	25.3	3.94	3.49	24.6	21.8	26.7					186.	136.	203.	198.	191.	140.
.15	25.7	24.0	4.67	4.36	21.1	19.6	12.6					75.0	64.9	105.	97.5	80.1	69.8
.2	23.6	22.5	5.10	4.86	18.5	17.6	7.27					24.3	22.1	47.6	44.3	29.8	27.5
.3	20.5	20.0	5.53	5.39	15.0	14.6	3.31					11.4	10.6	31.4	29.5	17.1	16.2
.4	18.4	18.1	5.69	5.57	12.7	12.5	1.87					6.50	6.15	24.3	23.1	12.2	11.8
.5	16.8	16.6	5.72	5.61	11.0	11.0	1.22					4.18	3.99	20.4	19.6	9.88	9.58
.6	15.5	15.4	5.70	5.59	9.81	9.81	.850					2.14	2.07	16.1	15.6	7.71	7.47
.8	13.6	13.5	5.57	5.60	8.06	8.10	.480					1.35	1.31	13.9	13.5	6.74	6.48
1.	12.2	12.2	5.39	5.17	6.86	7.03	.309					.635	.624	10.9	10.8	5.77	5.44
1.5	9.95	9.93	4.92	4.75	5.03	5.18	.139	.215		.215	.0656	.388	.383	9.67	9.59	5.62	4.98
2.	8.49	8.47	4.50	4.26	3.98	4.21	.0780	.730		.730	.337	.209	.207	8.75	8.72	4.90	4.88
3.	6.68	6.67	3.85	3.54	2.82	3.13	.0351	1.84	.00234	1.84	1.13	.137	.136	8.63	8.61	4.42	5.13
4.	5.58	5.58	3.39	3.04	2.19	2.54	.0196	2.88	.00960	2.89	1.95	.102	.101	8.68	8.67	6.88	5.42
5.	4.82	4.82	3.03	2.65	1.79	2.17	.0127	3.73	.0188	3.75	2.67	.0808	.0804	8.80	8.79	7.27	5.66
6.	4.26	4.26	2.74	2.33	1.52	1.93	.00888	4.42	.0292	4.45	3.25	.0563	.0561	9.14	9.14	7.98	6.10
8.	3.48	3.48	2.32	1.88	1.16	1.60	.00502	5.55	.0494	5.60	4.16	.0433	.0432	9.59	9.58	8.64	6.48
10.	2.97	2.97	2.03	1.55	.939	1.42	.00312	6.50	.0678	6.57	4.89	.0273	.0273	10.8	10.8	10.1	7.25
15.	2.20	2.20	1.56	1.12	.637	1.08	.00134	8.43	.106	8.54	6.10	.0197	.0197	11.8	11.8	11.3	7.54
20.	1.76	1.76	1.28	.852	.482	.908		9.85	.133	9.98	6.67	.0127	.0127	13.2	13.2	12.9	7.77
30.	1.28	1.28	.959	.549	.324	.731		11.7	.174	11.9	7.21	.00930	.00929	14.2	14.2	14.0	7.65
40.	1.02	1.02	.775	.391	.245	.629		13.0	.203	13.2	7.25	.00733	.00733	15.2	15.2	15.0	7.51
50.	.851	.851	.655	.296	.196	.555		14.1	.225	14.3	7.21	.00602	.00602	15.7	15.7	15.6	7.33
60.	.733	.733	.569	.232	.164	.501		14.8	.243	15.0	7.09	.00442	.00442	16.9	16.9	16.8	7.07
80.	.578	.578	.455	.157	.123	.421		16.0	.270	16.3	6.91	.00348	.00348	17.6	17.6	17.5	6.77
100.	.480	.480	.381	.115	.099	.365		16.8	.289	17.1	6.65						

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(cm²/g = 0.004298 x barns/atom)

E (MeV)	$(\frac{\mu}{\rho})^{KN}_{inc,t}$	$(\frac{\mu}{\rho})^{BD}_{inc,t}$	$(\frac{\mu}{\rho})^{KN}_{inc,a}$	$(\frac{\mu}{\rho})^{BD}_{inc,a}$	$(\frac{\mu}{\rho})^{KN}_{inc,s}$	$(\frac{\mu}{\rho})^{BD}_{inc,s}$	$(\frac{\mu}{\rho})_{coh}$	$(\frac{\mu}{\rho})_{\kappa n}$	$(\frac{\mu}{\rho})_{\kappa e}$	$(\frac{\mu}{\rho})_{\kappa,t}$	$(\frac{\mu}{\rho})_{\kappa,a}$	$(\frac{\mu}{\rho})_{\tau,t}$	$(\frac{\mu}{\rho})_{\tau,a}$	$(\frac{\mu}{\rho})_{tot,t}$	$(\frac{\mu}{\rho})_{tot,t-coh}$	$(\frac{\mu}{\rho})_{tot,a}$	$(\frac{\mu}{\rho})_{tot,en}$
.001	.165	.00688	.000322	.0000134	.165	.00688	8.98					10900.	10900.	10900.	10900.	10900.	10900.
M_{III} .001185	.165	.00847	.000381	.0000195	.165	.00847	8.81					7260.	7260.	7260.	7260.	7260.	7260.
												8380.	8380.	8380.	8380.	8380.	8380.
M_{II} .001273	.165	.00920	.000409	.0000228	.165	.00915	8.72					6620.	6620.	6620.	6620.	6620.	6620.
												7870.	7870.	7870.	7870.	7870.	7870.
M_{I} .001435	.165	.0106	.000460	.0000295	.165	.0105	8.55					5970.	5970.	5970.	5970.	5970.	5970.
												7310.	7310.	7310.	7310.	7310.	7310.
.0015	.165	.0111	.000481	.0000324	.164	.0110	8.51					6490.	6490.	6490.	6490.	6490.	6490.
.002	.165	.0152	.000640	.0000589	.164	.0151	7.99					3020.	3020.	3020.	3020.	3020.	3020.
.003	.164	.0227	.000950	.000132	.163	.0226	7.05					1020.	1020.	1030.	1020.	1020.	1020.
.004	.163	.0298	.00126	.000229	.162	.0296	6.15					477.	477.	481.	477.	477.	477.
.005	.162	.0360	.00156	.000345	.161	.0356	5.42					264.	264.	269.	264.	264.	264.
L_{III} .005723	.162	.0399	.00178	.000438	.160	.0395	4.94					184.	184.	190.	184.	184.	184.
												606.	524.	610.	606.	606.	524.
.006	.162	.0413	.00186	.000473	.160	.0408	4.81					524.	456.	529.	524.	524.	456.
L_{II} .006164	.162	.0421	.00190	.000494	.160	.0416	4.68					481.	422.	486.	481.	481.	422.
												666.	580.	670.	666.	666.	580.
L_{I} .006549	.162	.0438	.00202	.000546	.160	.0434	4.51					572.	503.	576.	572.	572.	503.
												658.	580.	662.	658.	658.	580.
.008	.161	.0503	.00243	.000761	.159	.0494	3.82					383.	345.	387.	383.	383.	345.
.01	.159	.0585	.00299	.00110	.157	.0572	3.11					209.	193.	212.	209.	209.	193.
.015	.157	.0735	.00434	.00203	.153	.0713	2.02					68.8	65.3	70.9	68.8	68.8	65.3
.02	.154	.0842	.00554	.00304	.149	.0812	1.45					31.2	30.0	32.8	31.3	31.2	30.0
.03	.149	.0971	.00774	.00507	.141	.0920	.834					10.1	9.89	11.1	10.2	10.1	9.89
.04	.144	.104	.00963	.00692	.135	.0971	.537					4.51	4.43	5.16	4.60	4.51	4.43
K .040443	.144	.104	.00971	.00701	.135	.0971	.529					4.38	4.30	5.03	4.47	4.38	4.30
												26.0	8.72	26.6	26.1	26.0	8.72
.05	.140	.107	.0113	.00868	.129	.0989	.382					14.6	6.75	15.1	14.7	14.6	6.75
.06	.136	.110	.0128	.0103	.123	.0993	.285					8.94	4.94	9.33	9.07	8.94	4.94
.08	.129	.110	.0151	.0129	.114	.0971	.173					4.10	2.72	4.38	4.21	4.11	2.73
.1	.123	.109	.0169	.0150	.106	.0937	.115					2.20	1.61	2.42	2.31	2.22	1.62
.15	.110	.103	.0201	.0187	.0907	.0842	.0542					.713	.585	.872	.817	.735	.602
.2	.101	.0967	.0219	.0209	.0795	.0756	.0312					.322	.279	.451	.419	.344	.300
.3	.0881	.0860	.0238	.0232	.0645	.0628	.0142					.104	.0950	.205	.190	.128	.118
.4	.0791	.0778	.0245	.0239	.0546	.0537	.00804					.0490	.0456	.135	.127	.0735	.0696
.5	.0722	.0713	.0246	.0241	.0473	.0473	.00524					.0279	.0264	.104	.0993	.0524	.0507
.6	.0666	.0662	.0245	.0240	.0422	.0422	.00365					.0180	.0171	.0877	.0842	.0425	.0417
.8	.0585	.0580	.0239	.0232	.0346	.0348	.00206					.00920	.00890	.0692	.0670	.0331	.0321
1.	.0524	.0524	.0232	.0222	.0295	.0302	.00133					.00580	.00563	.0597	.0580	.0290	.0279
1.5	.0428	.0427	.0211	.0204	.0216	.0223	.000597	.000924		.000924	.000282	.00273	.00268	.0468	.0466	.0248	.0234
2.	.0365	.0364	.0193	.0183	.0171	.0181	.000335	.00314		.00314	.00165	.00167	.00165	.0416	.0412	.0242	.0214
3.	.0287	.0287	.0165	.0152	.0121	.0135	.000151	.00791	.0000101	.00791	.00486	.000898	.000890	.0376	.0375	.0254	.0210
4.	.0240	.0240	.0146	.0131	.00941	.0109	.0000842	.0124	.0000413	.0124	.00838	.000589	.000585	.0371	.0370	.0276	.0220
5.	.0207	.0207	.0130	.0114	.00769	.00933	.0000546	.0160	.0000808	.0161	.0115	.000438	.000436	.0373	.0373	.0296	.0233
6.	.0183	.0183	.0118	.0100	.00653	.00830	.0000382	.0190	.000126	.0191	.0140	.000347	.000346	.0378	.0378	.0312	.0247
8.	.0150	.0150	.00997	.00808	.00499	.00688	.0000216	.0239	.000212	.0241	.0179	.000242	.000241	.0393	.0393	.0343	.0262
10.	.0128	.0128	.00872	.00666	.00404	.00610	.0000134	.0279	.000291	.0282	.0210	.000186	.000186	.0412	.0412	.0371	.0279
15.	.00946	.00946	.00670	.00481	.00274	.00464	.0000058	.0362	.000456	.0367	.0262	.000117	.000117	.0464	.0464	.0434	.0312
20.	.00756	.00756	.00550	.00366	.00207	.00390		.0423	.000572	.0429	.0287	.0000847	.0000847	.0507	.0507	.0486	.0324
30.	.00550	.00550	.00412	.00236	.00139	.00314		.0503	.000748	.0511	.0310	.0000546	.0000546	.0567	.0567	.0554	.0334
40.	.00438	.00438	.00333	.00168	.00105	.00270		.0559	.000872	.0567	.0312	.0000400	.0000399	.0610	.0610	.0602	.0329
50.	.00366	.00366	.00282	.00127	.000842	.00239		.0606	.000967	.0615	.0310	.0000315	.0000315	.0653	.0653	.0645	.0323
60.	.00315	.00315	.00245	.000997	.000705	.00215		.0636	.00104	.0645	.0305	.0000259	.0000259	.0675	.0675	.0670	.0315
80.	.00248	.00248	.00196	.000675	.000529	.00181		.0688	.00116	.0701	.0297	.0000190	.0000190	.0726	.0726	.0722	.0304
100.	.00206	.00206	.00164	.000494	.000426	.00157		.0722	.00124	.0735	.0286	.0000150	.0000150	.0756	.0756	.0752	.0291

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(barns/atom)

E (MeV)	$\sigma^{KN}_{inc,t}$	$\sigma^{BD}_{inc,t}$	$\sigma^{KN}_{inc,a}$	$\sigma^{BD}_{inc,a}$	$\sigma^{KN}_{inc,s}$	$\sigma^{BD}_{inc,s}$	σ_{coh}	$\sigma_{\pi n}$	$\sigma_{\pi e}$	$\sigma_{\pi,t}$	$\sigma_{\pi,a}$	$\sigma_{\gamma,t}$	$\sigma_{\gamma,a}$	$\sigma_{tot,t}$	$\sigma_{tot,t-coh}$	$\sigma_{tot,a}$	$\sigma_{tot,en}$
.001	39.1	1.59	.0762	.00310	39.0	1.59	2170.					2700000.	2700000.	2700000.	2700000.	2700000.	2700000.
M_{III} .001242	39.1	2.06	.0944	.00498	39.0	2.06	2110.					1610000.	1610000.	1610000.	1610000.	1610000.	1610000.
												1850000.	1850000.	1850000.	1850000.	1850000.	1850000.
M_{II} .001337	39.0	2.25	.102	.00585	38.9	2.24	2090.					1460000.	1460000.	1460000.	1460000.	1460000.	1460000.
												1730000.	1730000.	1730000.	1730000.	1730000.	1730000.
.0015	39.0	2.56	.114	.00747	38.9	2.55	2060.					1330000.	1330000.	1330000.	1330000.	1330000.	1330000.
M_{I} .001505	39.0	2.57	.114	.00752	38.9	2.56	2050.					1320000.	1320000.	1320000.	1320000.	1320000.	1320000.
												1610000.	1610000.	1610000.	1610000.	1610000.	1610000.
.002	38.9	3.51	.151	.0136	38.8	3.50	1940.					753000.	753000.	755000.	753000.	753000.	753000.
.003	38.8	5.27	.225	.0305	38.6	5.24	1710.					257000.	257000.	259000.	257000.	257000.	257000.
.004	38.6	6.91	.297	.0532	38.3	6.86	1500.					118000.	118000.	120000.	118000.	118000.	118000.
.005	38.5	8.36	.369	.0801	38.1	8.28	1320.					65700.	65700.	67000.	65700.	65700.	65700.
L_{III} .005964	38.4	9.58	.436	.109	37.9	9.47	1170.					41300.	41300.	42500.	41300.	41300.	41300.
												134000.	115000.	135000.	134000.	134000.	115000.
.006	38.3	9.62	.439	.110	37.9	9.51	1160.					131000.	113000.	132000.	131000.	131000.	113000.
L_{II} .006440	38.3	10.1	.470	.124	37.8	9.98	1110.					106000.	92400.	107000.	106000.	106000.	92400.
												147000.	128000.	148000.	147000.	147000.	128000.
L_{I} .006835	38.2	10.6	.497	.138	37.7	10.5	1060.					126000.	110000.	127000.	126000.	126000.	110000.
												146000.	128000.	147000.	146000.	146000.	128000.
.008	38.1	11.8	.576	.179	37.5	11.6	928.					95100.	84900.	96000.	95100.	95100.	84900.
.01	37.8	13.6	.708	.255	37.1	13.3	754.					51900.	47500.	52700.	51900.	51900.	47500.
.015	37.1	17.3	1.03	.479	36.1	16.8	490.					17200.	16200.	17700.	17200.	17200.	16200.
.02	36.5	19.8	1.32	.715	35.1	19.1	350.					7830.	7490.	8200.	7850.	7830.	7490.
.03	35.2	22.9	1.83	1.19	33.4	21.7	202.					2550.	2480.	2770.	2570.	2540.	2480.
.04	34.1	24.5	2.28	1.63	31.9	22.9	131.					1130.	1110.	1290.	1150.	1130.	1110.
K .041991	33.9	24.7	2.37	1.72	31.6	23.0	121.					985.	965.	1130.	1010.	987.	967.
												5800.	1940.	5950.	5820.	5800.	1940.
.05	33.1	25.4	2.67	2.05	30.5	23.4	92.5					3630.	1600.	3750.	3660.	3630.	1600.
.06	32.2	25.8	3.02	2.42	29.2	23.4	69.1					2210.	1180.	2300.	2240.	2210.	1180.
.08	30.5	26.0	3.57	3.04	26.9	23.0	42.0					1010.	657.	1080.	1040.	1010.	660.
.1	29.1	25.6	4.01	3.53	25.1	22.1	27.8					547.	394.	600.	573.	551.	398.
.15	26.2	24.4	4.75	4.43	21.4	20.0	13.1					178.	145.	215.	202.	183.	149.
.2	24.0	22.9	5.18	4.95	18.8	17.9	7.59					80.0	68.8	110.	103.	85.2	73.8
.3	20.9	20.3	5.62	5.47	15.2	14.8	3.45					26.2	23.8	49.9	46.5	31.8	29.3
.4	18.7	18.4	5.79	5.67	12.9	12.7	1.96					12.3	11.4	32.7	30.7	18.1	17.1
.5	17.1	16.9	5.82	5.71	11.2	11.2	1.27					7.00	6.61	25.2	23.9	12.8	12.3
.6	15.8	15.6	5.80	5.66	9.98	9.94	.890					4.50	4.29	21.0	20.1	10.3	9.95
.8	13.9	13.8	5.67	5.52	8.20	8.28	.500					2.30	2.22	16.6	16.1	7.97	7.74
1.	12.5	12.4	5.48	5.25	6.98	7.15	.322					1.45	1.41	14.2	13.8	6.93	6.66
1.5	10.1	10.1	5.01	4.83	5.12	5.27	.145	.225		.225	.0686	.689	.676	11.2	11.0	5.92	5.57
2.	8.63	8.62	4.58	4.33	4.05	4.29	.0815	.760		.760	.350	.417	.411	9.88	9.80	5.76	5.09
3.	6.79	6.78	3.92	3.59	2.87	3.19	.0368	1.91	.00237	1.91	1.17	.227	.225	8.95	8.92	6.06	4.98
4.	5.68	5.68	3.44	3.09	2.23	2.59	.0205	2.98	.00975	2.99	2.02	.150	.149	8.84	8.82	6.58	5.26
5.	4.90	4.90	3.08	2.69	1.82	2.21	.0133	3.85	.0192	3.87	2.75	.110	.109	8.89	8.88	7.06	5.55
6.	4.33	4.33	2.79	2.36	1.54	1.97	.00927	4.58	.0297	4.61	3.37	.0872	.0868	9.04	9.03	7.49	5.82
8.	3.54	3.54	2.36	1.91	1.18	1.63	.00524	5.71	.0503	5.76	4.28	.0607	.0605	9.37	9.36	8.18	6.25
10.	3.02	3.02	2.06	1.57	.955	1.45	.00327	6.70	.0689	6.77	5.03	.0469	.0468	9.84	9.84	8.88	6.69
15.	2.23	2.23	1.59	1.13	.648	1.10	.00139	8.70	.108	8.81	6.29	.0294	.0293	11.1	11.1	10.4	7.45
20.	1.79	1.79	1.30	.863	.490	.927		10.2	.136	10.3	6.88	.0213	.0213	12.1	12.1	11.6	7.76
30.	1.31	1.31	.975	.561	.330	.749		12.1	.177	12.3	7.43	.0137	.0137	13.6	13.6	13.3	8.00
40.	1.04	1.04	.788	.396	.249	.644		13.5	.206	13.7	7.47	.0100	.00999	14.7	14.7	14.5	7.88
50.	.866	.866	.667	.301	.199	.565		14.5	.229	14.7	7.39	.00787	.00787	15.6	15.6	15.4	7.70
60.	.746	.746	.579	.235	.167	.511		15.3	.247	15.5	7.26	.00645	.00645	16.3	16.3	16.1	7.50
80.	.588	.588	.463	.159	.126	.429		16.5	.273	16.8	7.11	.00473	.00473	17.4	17.4	17.3	7.27
100.	.489	.489	.388	.117	.101	.372		17.3	.294	17.6	6.79	.00373	.00373	18.1	18.1	18.0	6.91

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(cm^2/g = 0.004274 x barns/atom)

E (MeV)	$(\frac{\mu}{\rho})^{KN}_{inc,t}$	$(\frac{\mu}{\rho})^{BD}_{inc,t}$	$(\frac{\mu}{\rho})^{KN}_{inc,a}$	$(\frac{\mu}{\rho})^{BD}_{inc,a}$	$(\frac{\mu}{\rho})^{KN}_{inc,s}$	$(\frac{\mu}{\rho})^{BD}_{inc,s}$	$(\frac{\mu}{\rho})_{coh}$	$(\frac{\mu}{\rho})_{\kappa_n}$	$(\frac{\mu}{\rho})_{\kappa_e}$	$(\frac{\mu}{\rho})_{\kappa,t}$	$(\frac{\mu}{\rho})_{\kappa,a}$	$(\frac{\mu}{\rho})_{\tau,t}$	$(\frac{\mu}{\rho})_{\tau,a}$	$(\frac{\mu}{\rho})_{tot,t}$	$(\frac{\mu}{\rho})_{tot,t-coh}$	$(\frac{\mu}{\rho})_{tot,a}$	$(\frac{\mu}{\rho})_{tot,en}$
.001	.167	.00680	.000326	.0000132	.167	.00680	9.27					11500.	11500.	11500.	11500.	11500.	11500.
M_{III} .001242	.167	.00880	.000403	.0000213	.167	.00880	9.02					6880.	6880.	6880.	6880.	6880.	6880.
M_{II} .001337	.167	.00962	.000436	.0000250	.166	.00957	8.93					7910.	7910.	7910.	7910.	7910.	7910.
.0015	.167	.0109	.000487	.0000319	.166	.0109	8.80					6240.	6240.	6240.	6240.	6240.	6240.
M_I .001505	.167	.0110	.000487	.0000321	.166	.0109	8.76					7390.	7390.	7390.	7390.	7390.	7390.
.002	.166	.0150	.000645	.0000581	.166	.0150	8.29					5680.	5680.	5680.	5680.	5680.	5680.
.003	.166	.0225	.000962	.000130	.165	.0224	7.31					5640.	5640.	5640.	5640.	5640.	5640.
.004	.165	.0295	.00127	.000227	.164	.0293	6.41					6880.	6880.	6880.	6880.	6880.	6880.
.005	.165	.0357	.00158	.000342	.163	.0354	5.64					3220.	3220.	3230.	3220.	3220.	3220.
L_{III} .005964	.164	.0409	.00186	.000466	.162	.0405	5.00					1100.	1100.	1110.	1100.	1100.	1100.
.006	.164	.0411	.00188	.000470	.162	.0406	4.96					504.	504.	513.	504.	504.	504.
L_{II} .006440	.164	.0432	.00201	.000530	.162	.0427	4.74					281.	281.	286.	281.	281.	281.
L_I .006835	.163	.0453	.00212	.000590	.161	.0449	4.53					177.	177.	182.	177.	177.	177.
.008	.163	.0504	.00246	.000765	.160	.0496	3.97					573.	492.	577.	573.	573.	492.
.01	.162	.0581	.00303	.00109	.159	.0568	3.22					560.	483.	564.	560.	560.	483.
.015	.159	.0739	.00440	.00205	.154	.0718	2.09					453.	395.	457.	453.	453.	395.
.02	.156	.0846	.00564	.00306	.150	.0816	1.50					628.	547.	633.	628.	628.	547.
.03	.150	.0979	.00782	.00509	.143	.0927	.863					539.	470.	543.	539.	539.	470.
.04	.146	.105	.00974	.00697	.136	.0979	.560					624.	547.	628.	624.	624.	547.
K .041991	.145	.106	.0101	.00735	.135	.0983	.517					406.	363.	410.	406.	406.	363.
.05	.141	.109	.0114	.00876	.130	.100	.395					222.	203.	225.	222.	222.	203.
.06	.138	.110	.0129	.0103	.125	.100	.295					73.5	69.2	75.6	73.5	73.5	69.2
.08	.130	.111	.0153	.0130	.115	.0983	.180					31.5	32.0	35.0	33.6	33.5	32.0
.1	.124	.109	.0171	.0151	.107	.0945	.119					10.9	10.6	11.8	11.0	10.9	10.6
.15	.112	.104	.0203	.0189	.0915	.0855	.0560					4.83	4.74	5.51	4.92	4.83	4.74
.2	.103	.0979	.0221	.0212	.0804	.0765	.0324					4.21	4.12	4.83	4.32	4.22	4.13
.3	.0893	.0868	.0240	.0234	.0650	.0633	.0147					24.8	8.29	25.4	24.9	24.8	8.29
.4	.0799	.0786	.0247	.0242	.0551	.0543	.00838					15.5	6.84	16.0	15.6	15.5	6.84
.5	.0731	.0722	.0249	.0244	.0479	.0479	.00543					9.45	5.04	9.83	9.57	9.45	5.04
.6	.0675	.0667	.0248	.0242	.0427	.0425	.00380					4.32	2.81	4.62	4.44	4.32	2.82
.8	.0594	.0590	.0242	.0236	.0350	.0354	.00214					2.34	1.68	2.56	2.45	2.35	1.70
1.	.0534	.0530	.0234	.0224	.0298	.0306	.00138					.761	.620	.919	.863	.782	.637
1.5	.0432	.0432	.0214	.0206	.0219	.0225	.000620	.000962		.000962	.000293	.349	.294	.470	.440	.364	.315
2.	.0369	.0368	.0196	.0185	.0173	.0183	.000348	.00325		.00325	.00150	.112	.102	.213	.199	.136	.125
3.	.0290	.0290	.0168	.0153	.0123	.0136	.000157	.00816	.0000101	.00816	.00500	.0526	.0487	.140	.131	.0774	.0731
4.	.0243	.0243	.0147	.0132	.00953	.0111	.0000876	.0127	.0000417	.0128	.00863	.0299	.0283	.108	.102	.0547	.0526
5.	.0209	.0209	.0132	.0115	.00778	.00945	.0000568	.0165	.0000821	.0165	.0118	.0192	.0183	.0898	.0859	.0440	.0425
6.	.0185	.0185	.0119	.0101	.00658	.00842	.0000396	.0196	.0000127	.0197	.0144	.00983	.00949	.0709	.0688	.0341	.0331
8.	.0151	.0151	.0101	.00816	.00504	.00697	.0000224	.0244	.0000215	.0246	.0183	.00620	.00603	.0607	.0590	.0296	.0285
10.	.0129	.0129	.00880	.00671	.00408	.00620	.0000140	.0286	.0000294	.0289	.0215	.00296	.00289	.0479	.0470	.0253	.0238
15.	.00953	.00953	.00680	.00483	.00277	.00470	.0000059	.0372	.0000462	.0377	.0269	.00178	.00174	.0422	.0419	.0246	.0218
20.	.00765	.00765	.00556	.00369	.00209	.00396		.0436	.0000581	.0440	.0294	.000970	.000962	.0383	.0381	.0259	.0213
30.	.00560	.00560	.00417	.00240	.00141	.00320		.0517	.0000756	.0526	.0318	.000641	.000637	.0378	.0377	.0281	.0225
40.	.00444	.00444	.00337	.00169	.00106	.00275		.0577	.0000880	.0586	.0319	.000470	.000466	.0380	.0380	.0302	.0237
50.	.00370	.00370	.00285	.00129	.000851	.00241		.0620	.0000979	.0628	.0316	.000373	.000371	.0386	.0386	.0320	.0249
60.	.00319	.00319	.00247	.00100	.000714	.00218		.0654	.00106	.0662	.0310	.000259	.000259	.0400	.0400	.0350	.0267
80.	.00251	.00251	.00198	.000680	.000539	.00183		.0705	.00117	.0718	.0304	.000200	.000200	.0421	.0421	.0380	.0284
100.	.00209	.00209	.00166	.000500	.000432	.00159		.0739	.00126	.0752	.0290	.000126	.000125	.0474	.0474	.0444	.0318
												.0000910	.0000910	.0517	.0517	.0496	.0332
												.0000586	.0000586	.0581	.0581	.0568	.0342
												.0000427	.0000427	.0628	.0628	.0620	.0337
												.0000336	.0000336	.0667	.0667	.0658	.0329
												.0000276	.0000276	.0697	.0697	.0688	.0321
												.0000202	.0000202	.0744	.0744	.0739	.0311
												.0000159	.0000159	.0774	.0774	.0769	.0295

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(barns/atom)

E (MeV)	$\sigma^{KN}_{inc,t}$	$\sigma^{BD}_{inc,t}$	$\sigma^{KN}_{inc,a}$	$\sigma^{BD}_{inc,a}$	$\sigma^{KN}_{inc,s}$	$\sigma^{BD}_{inc,s}$	σ_{coh}	$\sigma_{\pi n}$	$\sigma_{\pi e}$	$\sigma_{\pi,t}$	$\sigma_{\pi,a}$	$\sigma_{\gamma,t}$	$\sigma_{\gamma,a}$	$\sigma_{tot,t}$	$\sigma_{tot,t-coh}$	$\sigma_{tot,a}$	$\sigma_{tot,en}$
.001	39.8	1.56	.0775	.00304	39.7	1.56	2250.					2540000.	2540000.	2540000.	2540000.	2540000.	2540000.
M_{IV} .001001	39.8	1.57	.0776	.00306	39.7	1.57	2250.					2540000.	2540000.	2540000.	2540000.	2540000.	2540000.
												2880000.	2880000.	2880000.	2880000.	2880000.	2880000.
M_{III} .001298	39.7	2.14	.100	.00541	39.6	2.13	2180.					1540000.	1540000.	1540000.	1540000.	1540000.	1540000.
												1770000.	1770000.	1770000.	1770000.	1770000.	1770000.
M_{II} .001403	39.7	2.34	.108	.00639	39.6	2.33	2160.					1380000.	1380000.	1380000.	1380000.	1380000.	1380000.
												1640000.	1640000.	1640000.	1640000.	1640000.	1640000.
.0015	39.7	2.53	.116	.00738	39.6	2.52	2130.					1400000.	1400000.	1400000.	1400000.	1400000.	1400000.
M_{I} .001575	39.7	2.67	.121	.00818	39.5	2.66	2120.					1250000.	1250000.	1250000.	1250000.	1250000.	1250000.
												1520000.	1520000.	1520000.	1520000.	1520000.	1520000.
.002	39.6	3.47	.154	.0135	39.4	3.46	2010.					802000.	802000.	804000.	802000.	802000.	802000.
.003	39.4	5.23	.229	.0303	39.2	5.20	1780.					276000.	276000.	278000.	276000.	276000.	276000.
.004	39.3	6.88	.302	.0529	39.0	6.83	1560.					128000.	128000.	130000.	128000.	128000.	128000.
.005	39.1	8.34	.375	.0799	38.8	8.26	1370.					71300.	71300.	72700.	71300.	71300.	71300.
.006	39.0	9.63	.446	.110	38.6	9.52	1220.					43600.	43600.	44800.	43600.	43600.	43600.
L_{III} .006208	39.0	9.88	.461	.117	38.5	9.76	1190.					39900.	39900.	41100.	39900.	39900.	39900.
												128000.	110000.	129000.	128000.	128000.	110000.
L_{II} .006722	38.9	10.5	.497	.134	38.4	10.4	1120.					101000.	87800.	102000.	101000.	101000.	87800.
												139000.	120000.	140000.	139000.	139000.	120000.
L_{I} .007128	38.8	10.9	.526	.147	38.3	10.8	1070.					120000.	105000.	121000.	120000.	120000.	105000.
												139000.	121000.	140000.	139000.	139000.	121000.
.008	38.7	11.8	.586	.179	38.1	11.6	969.					101000.	89500.	102000.	101000.	101000.	89500.
.01	38.4	13.7	.720	.257	37.7	13.4	787.					55400.	50400.	56200.	55400.	55400.	50400.
.015	37.7	17.4	1.04	.481	36.7	16.9	510.					18300.	17200.	18800.	18300.	18300.	17200.
.02	37.1	20.0	1.34	.722	35.7	19.3	365.					8390.	8010.	8780.	8410.	8390.	8010.
.03	35.8	23.1	1.87	1.20	34.0	21.9	211.					2740.	2660.	2970.	2760.	2740.	2660.
.04	34.7	24.8	2.32	1.65	32.4	23.1	136.					1220.	1190.	1380.	1240.	1220.	1190.
K .043569	34.3	25.2	2.47	1.81	31.9	23.4	120.					954.	934.	1100.	979.	946.	936.
												5570.	1840.	5720.	5600.	5570.	1840.
.05	33.7	25.7	2.72	2.07	31.0	23.6	96.5					3840.	1600.	3960.	3870.	3840.	1600.
.06	32.7	26.2	3.07	2.46	29.7	23.7	72.1					2330.	1200.	2430.	2360.	2330.	1200.
.08	31.0	26.3	3.63	3.08	27.4	23.2	43.8					1070.	680.	1140.	1100.	1070.	683.
.1	29.6	26.0	4.08	3.59	25.5	22.4	29.1					580.	411.	635.	606.	584.	415.
.15	26.6	24.8	4.83	4.40	21.8	20.3	13.7					190.	153.	228.	215.	195.	158.
.2	24.4	23.3	5.27	5.04	19.1	18.3	7.92					86.0	73.5	117.	109.	91.3	78.5
.3	21.2	20.7	5.72	5.58	15.5	15.1	3.61					28.2	25.5	52.5	48.9	33.9	31.1
.4	19.0	18.7	5.89	5.74	13.1	13.0	2.04					13.3	12.3	34.0	32.0	19.2	18.0
.5	17.3	17.1	5.92	5.78	11.4	11.3	1.33					7.57	7.13	26.0	24.7	13.5	12.9
.6	16.0	15.9	5.90	5.77	10.2	10.1	.925					4.87	4.63	21.7	20.8	10.8	10.6
.8	14.1	14.0	5.76	5.60	8.33	8.40	.522					2.49	2.40	17.0	16.5	8.25	8.00
1.	12.7	12.6	5.57	5.33	7.10	7.27	.337					1.56	1.51	14.5	14.2	7.13	6.84
1.5	10.3	10.3	5.09	4.92	5.20	5.38	.151	.235		.235	.0717	.740	.726	11.4	11.3	6.06	5.72
2.	8.78	8.77	4.66	4.40	4.12	4.37	.0850	.793		.793	.365	.448	.441	10.1	10.0	5.90	5.21
3.	6.91	6.90	3.98	3.65	2.92	3.25	.0382	1.98	.00242	1.98	1.21	.242	.240	9.16	9.12	6.20	5.10
4.	5.77	5.77	3.50	3.13	2.27	2.64	.0214	3.08	.00995	3.09	2.09	.160	.159	9.04	9.02	6.75	5.38
5.	4.98	4.98	3.13	2.72	1.85	2.26	.0139	3.98	.0195	4.00	2.85	.118	.117	9.11	9.10	7.25	5.69
6.	4.41	4.41	2.84	2.40	1.57	2.01	.00968	4.72	.0302	4.75	3.47	.0940	.0935	9.26	9.25	7.68	5.96
8.	3.60	3.60	2.40	1.94	1.20	1.66	.00548	5.90	.0511	5.95	4.42	.0653	.0651	9.69	9.69	8.42	6.49
10.	3.07	3.07	2.10	1.59	.971	1.48	.00342	6.92	.0700	6.99	5.19	.0500	.0499	10.1	10.1	9.14	6.83
15.	2.27	2.27	1.61	1.15	.659	1.12	.00144	8.98	.109	9.09	6.47	.0313	.0312	11.4	11.4	10.7	7.65
20.	1.82	1.82	1.32	.874	.499	.946		10.5	.138	10.6	7.07	.0228	.0228	12.4	12.4	11.9	7.97
30.	1.33	1.33	.992	.568	.335	.762		12.5	.180	12.7	7.63	.0147	.0147	14.0	14.0	13.7	8.21
40.	1.05	1.05	.802	.398	.253	.652		13.9	.210	14.1	7.65	.0107	.0107	15.2	15.2	14.9	8.06
50.	.881	.881	.678	.304	.203	.577		15.0	.232	15.2	7.59	.00844	.00844	16.1	16.1	15.9	7.90
60.	.758	.758	.589	.238	.170	.520		15.8	.251	16.1	7.46	.00692	.00692	16.9	16.9	16.7	7.70
80.	.598	.598	.470	.161	.128	.437		17.0	.278	17.3	7.26	.00510	.00510	17.9	17.9	17.8	7.43
100.	.497	.497	.394	.118	.102	.379		17.9	.299	18.2	6.97	.00400	.00400	18.7	18.7	18.6	7.09

60 NEODYMIUM

(cm^2/g = 0.004175 x barns/atom)

E (MeV)	$(\frac{\mu}{\rho})^{KN}_{inc,t}$	$(\frac{\mu}{\rho})^{BD}_{inc,t}$	$(\frac{\mu}{\rho})^{KN}_{inc,a}$	$(\frac{\mu}{\rho})^{BD}_{inc,a}$	$(\frac{\mu}{\rho})^{KN}_{inc,s}$	$(\frac{\mu}{\rho})^{BD}_{inc,s}$	$(\frac{\mu}{\rho})_{coh}$	$(\frac{\mu}{\rho})_{\kappa_n}$	$(\frac{\mu}{\rho})_{\kappa_e}$	$(\frac{\mu}{\rho})_{\kappa,t}$	$(\frac{\mu}{\rho})_{\kappa,n}$	$(\frac{\mu}{\rho})_{\tau,t}$	$(\frac{\mu}{\rho})_{\tau,a}$	$(\frac{\mu}{\rho})_{tot,t}$	$(\frac{\mu}{\rho})_{tot,t-coh}$	$(\frac{\mu}{\rho})_{tot,a}$	$(\frac{\mu}{\rho})_{tot,en}$
.001	.166	.00651	.000324	.0000127	.166	.00651	9.39					10600.	10600.	10600.	10600.	10600.	10600.
K_{IV} .001001	.166	.00655	.000324	.0000128	.166	.00655	9.39					10600.	10600.	10600.	10600.	10600.	10600.
K_{III} .001298	.166	.00893	.000418	.0000226	.165	.00889	9.10					12000.	12000.	12000.	12000.	12000.	12000.
K_{II} .001403	.166	.00977	.000451	.0000267	.165	.00973	9.02					6430.	6430.	6430.	6430.	6430.	6430.
.0015	.166	.0106	.000484	.0000308	.165	.0105	8.89					7390.	7390.	7390.	7390.	7390.	7390.
K_I .001575	.166	.0111	.000505	.0000342	.165	.0111	8.85					5760.	5760.	5760.	5760.	5760.	5760.
.002	.165	.0145	.000643	.0000564	.164	.0144	8.39					6850.	6850.	6850.	6850.	6850.	6850.
.003	.164	.0218	.000956	.0000127	.164	.0217	7.43					5850.	5850.	5850.	5850.	5850.	5850.
.004	.164	.0287	.00126	.000221	.163	.0285	6.51					5220.	5220.	5220.	5220.	5220.	5220.
.005	.163	.0348	.00157	.000334	.162	.0345	5.72					6350.	6350.	6350.	6350.	6350.	6350.
.006	.163	.0402	.00186	.000459	.161	.0397	5.09					3350.	3350.	3350.	3350.	3350.	3350.
L_{III} .006208	.163	.0412	.00192	.000488	.161	.0407	4.97					1150.	1150.	1160.	1150.	1150.	1150.
L_{II} .006722	.162	.0438	.00207	.000559	.160	.0434	4.68					534.	534.	543.	534.	534.	534.
L_I .007128	.162	.0455	.00220	.000614	.160	.0451	4.47					298.	298.	304.	298.	298.	298.
.008	.162	.0493	.00245	.000747	.159	.0484	4.05					182.	182.	187.	182.	182.	182.
.01	.160	.0572	.00301	.00107	.157	.0559	3.29					167.	167.	172.	167.	167.	167.
.015	.157	.0726	.00434	.00201	.153	.0706	2.13					534.	459.	539.	534.	534.	459.
.02	.155	.0835	.00559	.00301	.149	.0806	1.52					422.	367.	426.	422.	422.	367.
.03	.149	.0964	.00781	.00501	.142	.0914	.881					580.	501.	585.	580.	580.	501.
.04	.145	.104	.00969	.00689	.135	.0964	.568					501.	438.	505.	501.	501.	438.
K .043569	.143	.105	.0103	.00756	.133	.0977	.501					580.	505.	585.	580.	580.	505.
.05	.141	.107	.0114	.00864	.129	.0985	.403					427.	374.	426.	422.	422.	374.
.06	.137	.109	.0128	.0103	.124	.0989	.301					231.	210.	235.	231.	231.	210.
.08	.129	.110	.0152	.0129	.114	.0969	.183					76.4	71.8	78.5	76.4	76.4	71.8
.1	.124	.109	.0170	.0150	.106	.0935	.121					35.0	33.4	36.7	35.1	35.0	33.4
.15	.111	.104	.0202	.0188	.0910	.0848	.0572					11.4	11.1	12.4	11.5	11.4	11.1
.2	.102	.0973	.0220	.0210	.0797	.0764	.0331					5.09	4.97	5.76	5.18	5.09	4.97
.3	.0885	.0864	.0239	.0233	.0647	.0630	.0151					3.98	3.90	4.59	4.09	3.99	3.91
.4	.0793	.0781	.0246	.0240	.0547	.0543	.00852					23.3	7.68	23.9	23.4	23.3	7.68
.5	.0722	.0714	.0247	.0241	.0476	.0472	.00555					16.0	6.68	16.5	16.2	16.0	6.68
.6	.0668	.0664	.0246	.0241	.0426	.0422	.00386					9.73	5.01	10.1	9.85	9.73	5.01
.8	.0589	.0585	.0240	.0234	.0348	.0351	.00218					4.47	2.84	4.76	4.59	4.47	2.85
1.	.0530	.0526	.0233	.0223	.0296	.0304	.00141					2.42	1.72	2.65	2.53	2.44	1.73
1.5	.0430	.0430	.0213	.0205	.0217	.0225	.000630	.000981		.000981	.000299	.793	.639	.952	.898	.814	.660
2.	.0367	.0366	.0195	.0184	.0172	.0182	.000355	.00331		.00331	.00152	.359	.307	.488	.455	.381	.328
3.	.0288	.0288	.0166	.0152	.0122	.0136	.000159	.00827	.0000101	.00827	.00505	.118	.106	.219	.204	.142	.130
4.	.0241	.0241	.0146	.0131	.00948	.0110	.0000893	.0129	.0000415	.0129	.00873	.0555	.0514	.142	.134	.0802	.0751
5.	.0208	.0208	.0131	.0114	.00772	.00944	.0000580	.0166	.0000814	.0167	.0119	.0316	.0298	.109	.103	.0564	.0539
6.	.0184	.0184	.0119	.0100	.00655	.00839	.0000404	.0197	.000126	.0198	.0145	.0203	.0193	.0906	.0868	.0451	.0434
8.	.0150	.0150	.0100	.00810	.00501	.00693	.0000229	.0246	.000213	.0248	.0185	.0104	.0100	.0710	.0689	.0344	.0334
10.	.0128	.0128	.00877	.00664	.00405	.00618	.0000143	.0289	.000292	.0292	.0217	.00651	.00630	.0605	.0593	.0298	.0286
15.	.00948	.00948	.00672	.00480	.00275	.00468	.0000060	.0375	.000455	.0380	.0270	.00309	.00303	.0476	.0472	.0253	.0239
20.	.00760	.00760	.00551	.00365	.00208	.00395		.0438	.000576	.0443	.0295	.00187	.00184	.0422	.0417	.0246	.0218
30.	.00555	.00555	.00414	.00237	.00140	.00318		.0522	.000751	.0530	.0319	.00101	.00100	.0382	.0381	.0259	.0213
40.	.00438	.00438	.00335	.00166	.00106	.00272		.0580	.000877	.0589	.0319	.000668	.000664	.0377	.0377	.0282	.0225
50.	.00368	.00368	.00283	.00127	.000848	.00241		.0626	.000969	.0635	.0317	.000493	.000488	.0380	.0380	.0303	.0238
60.	.00316	.00316	.00246	.000994	.000710	.00217		.0660	.00105	.0672	.0311	.000392	.000390	.0387	.0386	.0321	.0249
80.	.00250	.00250	.00196	.000672	.000534	.00182		.0710	.00116	.0722	.0303	.000273	.000272	.0402	.0402	.0352	.0268
100.	.00207	.00207	.00164	.000493	.000426	.00158		.0747	.00125	.0760	.0291	.000209	.000208	.0422	.0422	.0382	.0285
												.000131	.000130	.0476	.0476	.0447	.0319
												.0000952	.0000952	.0518	.0518	.0497	.0337
												.0000614	.0000614	.0585	.0585	.0572	.0343
												.0000447	.0000447	.0635	.0635	.0622	.0337
												.0000352	.0000352	.0672	.0672	.0664	.0330
												.0000289	.0000289	.0706	.0706	.0697	.0321
												.0000213	.0000213	.0747	.0747	.0743	.0310
												.0000167	.0000167	.0781	.0781	.0777	.0296

61 PROMETHIUM
(barns/atom)

E (MeV)	KN $\sigma_{inc,t}$	BD $\sigma_{inc,t}$	KN $\sigma_{inc,a}$	BD $\sigma_{inc,a}$	KN $\sigma_{inc,s}$	BD $\sigma_{inc,s}$	σ_{coh}	$\sigma_{n'}$	$\sigma_{n'e}$	$\sigma_{n',t}$	$\sigma_{n',a}$	$\sigma_{r,t}$	$\sigma_{r,a}$	$\sigma_{tot,t}$	$\sigma_{tot,t-coh}$	$\sigma_{tot,a}$	$\sigma_{tot,en}$
.001	40.4	1.53	.0788	.00298	40.3	1.53	2330.					867000.	867000.	869000.	867000.	867000.	867000.
M_V .001027	40.4	1.58	.0809	.00316	40.3	1.58	2320.					812000.	812000.	814000.	812000.	812000.	812000.
M_{IV} .001052	40.4	1.63	.0828	.00334	40.3	1.63	2320.					2540000.	2540000.	2540000.	2540000.	2540000.	2540000.
M_{III} .001357	40.4	2.22	.107	.00586	40.3	2.21	2250.					2400000.	2400000.	2400000.	2400000.	2400000.	2400000.
M_{II} .001471	40.3	2.43	.115	.00695	40.2	2.42	2220.					2720000.	2720000.	2720000.	2720000.	2720000.	2720000.
.0015	40.3	2.49	.118	.00726	40.2	2.48	2210.					1470000.	1470000.	1470000.	1470000.	1470000.	1470000.
M_I .001648	40.3	2.77	.129	.00887	40.2	2.76	2180.					1690000.	1690000.	1690000.	1690000.	1690000.	1690000.
.002	40.3	3.42	.156	.0133	40.1	3.41	2090.					1310000.	1310000.	1310000.	1310000.	1310000.	1310000.
.003	40.1	5.19	.232	.0301	39.9	5.16	1850.					1560000.	1560000.	1560000.	1560000.	1560000.	1560000.
.004	40.0	6.84	.307	.0526	39.6	6.79	1630.					1480000.	1480000.	1480000.	1480000.	1480000.	1480000.
.005	39.8	8.32	.381	.0797	39.4	8.24	1430.					1190000.	1190000.	1190000.	1190000.	1190000.	1190000.
.006	39.6	9.63	.454	.110	39.2	9.52	1270.					1450000.	1450000.	1450000.	1450000.	1450000.	1450000.
L_{III} .006459	39.6	10.2	.487	.125	39.1	10.1	1200.					868000.	868000.	870000.	868000.	868000.	868000.
L_{II} .007013	39.5	10.8	.526	.144	39.0	10.7	1130.					296000.	296000.	298000.	296000.	296000.	296000.
L_I .007428	39.4	11.3	.556	.159	38.9	11.1	1080.					137000.	137000.	139000.	137000.	137000.	137000.
.008	39.4	11.9	.596	.180	38.8	11.7	1010.					76500.	76500.	77900.	76500.	76500.	76500.
.01	39.1	13.8	.732	.259	38.3	13.5	821.					46700.	46700.	48000.	46700.	46700.	46700.
.015	38.4	17.5	1.06	.484	37.3	17.0	532.					38600.	38600.	39800.	38600.	38600.	38600.
.02	37.7	20.2	1.36	.729	36.3	19.5	379.					122000.	104000.	123000.	122000.	122000.	104000.
.03	36.4	23.4	1.90	1.22	34.6	22.2	220.					95800.	82900.	96900.	95800.	95800.	82900.
.04	35.3	25.1	2.35	1.67	32.9	23.4	142.					132000.	114000.	133000.	132000.	132000.	114000.
K .045184	34.7	25.7	2.58	1.91	32.2	23.8	118.					114000.	99000.	115000.	114000.	114000.	99000.
.05	34.2	26.1	2.76	2.11	31.5	24.0	101.					132000.	115000.	133000.	132000.	132000.	115000.
.06	33.3	26.6	3.12	2.50	30.2	24.1	75.1					107000.	93900.	108000.	107000.	107000.	93900.
.08	31.5	26.7	3.69	3.13	27.9	23.6	45.7					59000.	53200.	59800.	59000.	59000.	53200.
.1	30.1	26.4	4.15	3.64	25.9	22.8	30.3					19600.	18300.	20100.	19600.	19600.	18300.
.15	27.1	25.2	4.91	4.57	22.1	20.6	14.3					8950.	8510.	9350.	8970.	8950.	8510.
.2	24.8	23.6	5.36	5.10	19.4	18.5	8.27					2950.	2850.	3190.	2970.	2950.	2850.
.3	21.6	21.0	5.81	5.66	15.8	15.3	3.76					1300.	1270.	1470.	1330.	1300.	1270.
.4	19.3	19.0	5.98	5.83	13.3	13.2	2.13					925.	905.	1070.	951.	928.	907.
.5	17.6	17.4	6.02	5.88	11.6	11.5	1.38					5350.	1760.	5490.	5380.	5350.	1760.
.6	16.3	16.2	6.00	5.88	10.3	10.3	.965					4100.	1620.	4230.	4130.	4100.	1620.
.8	14.3	14.2	5.86	5.68	8.47	8.52	.647					2480.	1230.	2580.	2510.	2480.	1230.
1.	12.9	12.8	5.67	5.40	7.22	7.40	.350					1140.	708.	1210.	1170.	1140.	711.
1.5	10.5	10.4	5.18	4.96	5.29	5.44	.158	.245		.245	.0745	620.	432.	677.	646.	624.	436.
2.	8.92	8.91	4.74	4.47	4.19	4.44	.0889	.825		.825	.380	203.	162.	242.	228.	208.	167.
3.	7.02	7.01	4.05	3.71	2.97	3.30	.0400	2.05	.00246	2.05	1.25	92.0	78.1	124.	116.	97.4	83.2
4.	5.87	5.87	3.56	3.18	2.31	2.69	.0224	3.19	.0101	3.20	2.16	30.1	27.1	54.9	51.1	35.9	32.8
5.	5.07	5.07	3.18	2.76	1.89	2.31	.0145	4.11	.0198	4.13	2.94	14.3	13.2	35.4	33.3	20.3	19.0
6.	4.48	4.48	2.88	2.43	1.59	2.05	.0101	4.87	.0307	4.90	3.58	8.12	7.63	26.9	25.5	14.1	13.5
8.	3.66	3.66	2.44	1.96	1.22	1.70	.00572	6.07	.0520	6.12	4.54	5.22	4.96	22.4	21.4	11.2	10.8
10.	3.12	3.12	2.13	1.61	.988	1.51	.00358	7.17	.0711	7.24	5.37	2.68	2.58	17.4	16.9	8.54	8.26
15.	2.31	2.31	1.64	1.16	.670	1.15	.00149	9.25	.111	9.36	6.63	1.68	1.63	14.8	14.5	7.35	7.03
20.	1.85	1.85	1.35	.886	.507	.964		10.8	.140	10.9	7.22	.800	.784	11.6	11.4	6.22	5.82
30.	1.35	1.35	1.01	.572	.341	.778		12.9	.182	13.1	7.84	.485	.478	10.3	10.2	6.05	5.33
40.	1.07	1.07	.815	.404	.257	.666		14.3	.213	14.5	7.82	.259	.256	9.36	9.32	6.36	5.22
50.	.895	.895	.689	.307	.206	.588		15.5	.236	15.7	7.79	.172	.171	9.26	9.24	6.93	5.51
60.	.771	.771	.598	.241	.173	.530		16.3	.254	16.6	7.65	.127	.126	9.34	9.33	7.44	5.83
80.	.608	.608	.478	.163	.130	.445		17.5	.282	17.8	7.42	.101	.100	9.49	9.48	7.88	6.11
100.	.505	.505	.401	.120	.104	.385		18.5	.303	18.8	7.15	.0702	.0699	9.86	9.85	8.63	6.57
												.0538	.0536	10.4	10.4	9.42	7.03
												.0338	.0337	11.7	11.7	11.0	7.82
												.0246	.0246	12.8	12.8	12.3	8.13
												.0158	.0158	14.5	14.5	14.1	8.47
												.0115	.0115	15.6	15.6	15.3	8.24
												.00906	.00905	16.6	16.6	16.4	8.11
												.00742	.00742	17.4	17.4	17.2	7.90
												.00545	.00545	18.4	18.4	18.3	7.59
												.00430	.00430	19.3	19.3	19.2	7.27

ol PROMETHIUM

(cm^2/g = 0.004153 x barns/atom)

E (MeV)	$(\frac{\mu}{\rho})^{KN}_{inc,t}$	$(\frac{\mu}{\rho})^{BD}_{inc,t}$	$(\frac{\mu}{\rho})^{KN}_{inc,a}$	$(\frac{\mu}{\rho})^{BD}_{inc,a}$	$(\frac{\mu}{\rho})^{KN}_{inc,s}$	$(\frac{\mu}{\rho})^{BD}_{inc,s}$	$(\frac{\mu}{\rho})_{coh}$	$(\frac{\mu}{\rho})_{\kappa n}$	$(\frac{\mu}{\rho})_{\kappa e}$	$(\frac{\mu}{\rho})_{\kappa,t}$	$(\frac{\mu}{\rho})_{\kappa,a}$	$(\frac{\mu}{\rho})_{\tau,t}$	$(\frac{\mu}{\rho})_{\tau,a}$	$(\frac{\mu}{\rho})_{tot,t}$	$(\frac{\mu}{\rho})_{tot,t-coh}$	$(\frac{\mu}{\rho})_{tot,a}$	$(\frac{\mu}{\rho})_{tot,en}$
.001	.168	.00635	.000327	.0000124	.167	.00635	9.68					3600.	3600.	3610.	3600.	3600.	3600.
M_V .001027	.168	.00656	.000336	.0000131	.167	.00656	9.63					3370.	3370.	3380.	3370.	3370.	3370.
M_{IV} .001052	.168	.00677	.000344	.0000139	.167	.00677	9.63					10500.	10500.	10500.	10500.	10500.	10500.
M_{III} .001357	.168	.00922	.000444	.0000243	.167	.00918	9.34					9970.	9970.	9970.	9970.	9970.	9970.
M_{II} .001471	.167	.0101	.000478	.0000289	.167	.0101	9.22					11300.	11300.	11300.	11300.	11300.	11300.
.0015	.167	.0103	.000490	.0000302	.167	.0103	9.18					6100.	6100.	6100.	6100.	6100.	6100.
M_I .001648	.167	.0115	.000536	.0000368	.167	.0115	9.05					7020.	7020.	7020.	7020.	7020.	7020.
.002	.167	.0142	.000648	.0000552	.167	.0142	8.68					5440.	5440.	5440.	5440.	5440.	5440.
.003	.167	.0216	.000963	.000125	.166	.0214	7.68					6480.	6480.	6480.	6480.	6480.	6480.
.004	.166	.0284	.00127	.000218	.164	.0282	6.77					6150.	6150.	6150.	6150.	6150.	6150.
.005	.165	.0346	.00158	.000331	.164	.0342	5.94					4940.	4940.	4940.	4940.	4940.	4940.
.006	.164	.0400	.00189	.000457	.163	.0395	5.27					6020.	6020.	6020.	6020.	6020.	6020.
L_{III} .006459	.164	.0424	.00202	.000519	.162	.0419	4.98					3600.	3600.	3610.	3600.	3600.	3600.
L_{II} .007013	.164	.0449	.00218	.000598	.162	.0444	4.69					1230.	1230.	1240.	1230.	1230.	1230.
L_I .007428	.164	.0469	.00231	.000660	.162	.0461	4.49					569.	569.	577.	569.	569.	569.
.008	.164	.0494	.00248	.000748	.161	.0486	4.19					318.	318.	324.	318.	318.	318.
.01	.162	.0573	.00304	.00108	.159	.0561	3.41					194.	194.	199.	194.	194.	194.
.015	.159	.0727	.00440	.00201	.155	.0706	2.21					160.	160.	165.	160.	160.	160.
.02	.157	.0839	.00565	.00303	.151	.0810	1.57					507.	432.	511.	507.	507.	432.
.03	.151	.0972	.00789	.00507	.144	.0922	.914					398.	344.	402.	398.	398.	344.
.04	.147	.104	.00976	.00694	.137	.0972	.590					548.	473.	552.	548.	548.	473.
K .045184	.144	.107	.0107	.00793	.134	.0988	.490					473.	411.	478.	473.	473.	411.
.05	.142	.108	.0115	.00876	.131	.0997	.419					548.	478.	552.	548.	548.	478.
.06	.138	.110	.0130	.0104	.125	.100	.312					444.	390.	449.	444.	444.	390.
.08	.131	.111	.0153	.0130	.116	.0980	.190					245.	221.	248.	245.	245.	221.
.1	.125	.110	.0172	.0151	.108	.0947	.126					81.4	76.0	83.5	81.4	81.4	76.0
.15	.113	.105	.0204	.0190	.0918	.0856	.0594					37.2	35.3	38.8	37.3	37.2	35.3
.2	.103	.0980	.0223	.0212	.0806	.0768	.0343					12.3	11.8	13.2	12.3	12.3	11.8
.3	.0897	.0872	.0241	.0235	.0656	.0635	.0156					5.40	5.27	6.10	5.52	5.40	5.27
.4	.0802	.0789	.0248	.0242	.0552	.0548	.00885					3.84	3.76	4.44	3.95	3.85	3.77
.5	.0731	.0723	.0250	.0244	.0482	.0478	.00573					22.2	7.31	22.8	22.3	22.2	7.31
.6	.0677	.0673	.0249	.0244	.0428	.0428	.00401					17.0	6.73	17.6	17.2	17.0	6.73
.8	.0594	.0590	.0243	.0236	.0352	.0354	.00227					10.3	5.11	10.7	10.4	10.3	5.11
1.	.0536	.0532	.0235	.0224	.0300	.0307	.00145					4.73	2.96	5.03	4.86	4.73	2.95
1.5	.0436	.0432	.0215	.0206	.0220	.0226	.0000656	.00102		.00102	.000309	2.57	1.79	2.81	2.68	2.59	1.81
2.	.0370	.0370	.0197	.0186	.0174	.0184	.0000369	.00343		.00343	.00158	.843	.673	1.01	.947	.864	.694
3.	.0292	.0291	.0168	.0154	.0123	.0137	.0000166	.00851	.0000102	.00851	.00519	.382	.324	.515	.482	.405	.346
4.	.0244	.0244	.0148	.0132	.00959	.0112	.0000930	.0132	.0000419	.0133	.00897	.125	.113	.228	.212	.149	.136
5.	.0211	.0211	.0132	.0115	.00785	.00959	.0000602	.0171	.0000822	.0172	.0122	.0594	.0548	.147	.138	.0843	.0789
6.	.0186	.0186	.0120	.0101	.00660	.00851	.0000419	.0202	.0000127	.0203	.0149	.0337	.0317	.112	.106	.0586	.0561
8.	.0152	.0152	.0101	.00814	.00507	.00706	.0000238	.0252	.0000216	.0254	.0189	.0217	.0204	.0930	.0889	.0465	.0449
10.	.0130	.0130	.00885	.00669	.00410	.00627	.0000149	.0298	.0000295	.0301	.0223	.0111	.0107	.0723	.0702	.0355	.0343
15.	.00959	.00959	.00681	.00482	.00278	.00478	.0000062	.0384	.0000461	.0389	.0275	.00698	.00677	.0615	.0602	.0305	.0292
20.	.00768	.00768	.00561	.00368	.00211	.00400		.0449	.0000581	.0457	.0300	.00332	.00326	.0482	.0473	.0258	.0242
30.	.00561	.00561	.00419	.00238	.00142	.00323		.0536	.0000756	.0544	.0326	.00201	.00199	.0428	.0424	.0251	.0221
40.	.00444	.00444	.00338	.00168	.00107	.00277		.0594	.0000885	.0602	.0325	.00108	.00104	.0389	.0387	.0264	.0217
50.	.00375	.00372	.00286	.00127	.000856	.00244		.0644	.0000980	.0652	.0324	.000714	.000710	.0385	.0384	.0288	.0229
60.	.00320	.00320	.00248	.00100	.000718	.00220		.0677	.00105	.0689	.0318	.000527	.000523	.0388	.0387	.0309	.0242
80.	.00253	.00253	.00199	.000677	.000540	.00185		.0727	.00117	.0739	.0308	.000419	.000415	.0394	.0394	.0327	.0254
100.	.00210	.00210	.00167	.000498	.000432	.00160		.0768	.00126	.0781	.0297	.000292	.000290	.0409	.0409	.0358	.0273
												.000223	.000223	.0432	.0432	.0391	.0292
												.000140	.000140	.0486	.0486	.0457	.0325
												.000102	.000102	.0532	.0532	.0511	.0338
												.0000656	.0000656	.0602	.0602	.0586	.0350
												.0000478	.0000478	.0648	.0648	.0635	.0342
												.0000376	.0000376	.0689	.0689	.0681	.0337
												.0000308	.0000308	.0723	.0723	.0714	.0328
												.0000226	.0000226	.0764	.0764	.0760	.0315
												.0000179	.0000179	.0802	.0802	.0797	.0302

62 SAMARIUM
(barns/atom)

E (MeV)	$\sigma^{KN}_{inc,t}$	$\sigma^{BD}_{inc,t}$	$\sigma^{KN}_{inc,a}$	$\sigma^{BD}_{inc,a}$	$\sigma^{KN}_{inc,s}$	$\sigma^{BD}_{inc,s}$	σ_{coh}	$\sigma_{\kappa n}$	$\sigma_{\kappa e}$	$\sigma_{\kappa,t}$	$\sigma_{\kappa,a}$	$\sigma_{\gamma,t}$	$\sigma_{\gamma,a}$	$\sigma_{tot,t}$	$\sigma_{tot,t-coh}$	$\sigma_{tot,a}$	$\sigma_{tot,en}$
.001	41.1	1.50	.0800	.00292	41.0	1.50	2410.					914000.	914000.	916000.	914000.	914000.	914000.
M_V .001078	41.1	1.65	.0863	.00346	41.0	1.65	2390.					769000.	769000.	771000.	769000.	769000.	769000.
												2410000.	2410000.	2410000.	2410000.	2410000.	2410000.
M_{IV} .001106	41.1	1.70	.0885	.00366	41.0	1.70	2380.					2270000.	2270000.	2270000.	2270000.	2270000.	2270000.
												2570000.	2570000.	2570000.	2570000.	2570000.	2570000.
M_{III} .001419	41.0	2.29	.113	.00632	40.9	2.28	2310.					1400000.	1400000.	1400000.	1400000.	1400000.	1400000.
												1610000.	1610000.	1610000.	1610000.	1610000.	1610000.
.0015	41.0	2.45	.120	.00715	40.9	2.44	2290.					1350000.	1350000.	1350000.	1350000.	1350000.	1350000.
M_{II} .001541	41.0	2.52	.123	.00755	40.9	2.51	2280.					1250000.	1250000.	1250000.	1250000.	1250000.	1250000.
												1480000.	1480000.	1480000.	1480000.	1480000.	1480000.
M_I .001723	41.0	2.86	.137	.00957	40.8	2.85	2240.					1140000.	1140000.	1140000.	1140000.	1140000.	1140000.
												1380000.	1380000.	1380000.	1380000.	1380000.	1380000.
.002	40.9	3.37	.159	.0131	40.8	3.36	2170.					923000.	923000.	925000.	923000.	923000.	923000.
.003	40.8	5.14	.236	.0298	40.5	5.11	1920.					317000.	317000.	319000.	317000.	317000.	317000.
.004	40.6	6.79	.312	.0522	40.3	6.74	1700.					148000.	148000.	150000.	148000.	148000.	148000.
.005	40.5	8.29	.387	.0794	40.1	8.21	1490.					82000.	82000.	83500.	82000.	82000.	82000.
.006	40.3	9.62	.461	.110	39.8	9.51	1320.					50300.	50300.	51600.	50300.	50300.	50300.
L_{III} .006716	40.2	10.5	.513	.134	39.7	10.4	1220.					37300.	37300.	38500.	37300.	37300.	37300.
												117000.	99500.	118000.	117000.	117000.	99500.
L_{II} .007312	40.1	11.2	.556	.155	39.5	11.0	1140.					91100.	78600.	92300.	91100.	91100.	78600.
												126000.	108000.	127000.	126000.	126000.	108000.
L_I .007736	40.0	11.6	.587	.170	39.5	11.4	1090.					109000.	94400.	110000.	109000.	109000.	94400.
												126000.	109000.	127000.	126000.	126000.	109000.
.008	40.0	11.9	.605	.180	39.4	11.7	1060.					114000.	99100.	115000.	114000.	114000.	99100.
.01	39.7	13.8	.744	.259	39.0	13.5	857.					62800.	56200.	63700.	62800.	62800.	56200.
.015	39.0	17.6	1.08	.487	37.9	17.1	554.					20900.	19400.	21500.	20900.	20900.	19400.
.02	38.3	20.4	1.38	.736	36.9	19.7	395.					9590.	9090.	10000.	9610.	9590.	9090.
.03	37.0	23.7	1.93	1.23	35.1	22.5	229.					3150.	3040.	3400.	3170.	3150.	3040.
.04	35.9	25.4	2.39	1.69	33.5	23.7	148.					1410.	1370.	1580.	1440.	1410.	1370.
K .046834	35.1	26.2	2.69	2.00	32.5	24.2	116.					897.	877.	1040.	923.	900.	879.
												5140.	1680.	5280.	5170.	5140.	1680.
.05	34.8	26.4	2.81	2.13	32.0	24.3	105.					4300.	1590.	4430.	4330.	4300.	1590.
.06	33.8	26.9	3.17	2.52	30.7	24.4	78.3					2620.	1240.	2730.	2650.	2620.	1240.
.08	32.1	27.1	3.76	3.17	28.3	23.9	47.7					1200.	727.	1270.	1230.	1200.	730.
.1	30.5	26.8	4.22	3.70	26.3	23.1	31.6					655.	449.	713.	682.	659.	453.
.15	27.5	25.6	4.99	4.65	22.5	21.0	14.9					217.	171.	257.	243.	232.	176.
.2	25.2	24.0	5.45	5.19	19.8	18.8	8.62					98.5	83.0	131.	122.	104.	88.2
.3	21.9	21.3	5.91	5.74	16.0	15.6	3.92					32.6	29.2	57.8	53.9	38.5	34.9
.4	19.6	19.3	6.08	5.93	13.6	13.4	2.22					15.3	14.1	36.8	34.6	21.4	20.0
.5	17.9	17.7	6.11	5.98	11.8	11.7	1.44					8.75	8.20	27.9	26.4	14.9	14.2
.6	16.6	16.4	6.09	5.95	10.5	10.4	1.00					5.59	5.30	23.0	22.0	11.7	11.3
.8	14.6	14.5	5.96	5.80	8.61	8.70	.571					2.87	2.76	17.9	17.4	8.83	8.56
1.	13.1	13.0	5.76	5.49	7.33	7.51	.367					1.80	1.74	15.2	14.8	7.56	7.23
1.5	10.6	10.6	5.26	5.06	5.38	5.54	.165	.256		.256	.0778	.860	.842	11.9	11.7	6.38	5.98
2.	9.07	9.06	4.81	4.54	4.26	4.52	.0925	.855		.855	.393	.520	.512	10.5	10.4	6.19	5.44
3.	7.14	7.13	4.12	3.76	3.02	3.37	.0417	2.13	.00250	2.13	1.30	.279	.276	9.58	9.54	6.53	5.34
4.	5.96	5.96	3.62	3.22	2.34	2.74	.0234	3.30	.0102	3.31	2.23	.185	.184	9.48	9.45	7.11	5.63
5.	5.15	5.15	3.23	2.80	1.92	2.35	.0152	4.25	.0201	4.27	3.03	.137	.136	9.57	9.56	7.64	5.97
6.	4.55	4.55	2.93	2.46	1.62	2.09	.0105	5.00	.0312	5.03	3.66	.108	.107	9.70	9.69	8.07	6.23
8.	3.72	3.72	2.48	1.99	1.24	1.73	.00597	6.27	.0528	6.32	4.67	.0759	.0746	10.1	10.1	8.88	6.74
10.	3.17	3.17	2.17	1.64	1.00	1.53	.00375	7.40	.0723	7.47	5.52	.0579	.0577	10.7	10.7	9.70	7.22
15.	2.35	2.35	1.67	1.18	.681	1.17	.00155	9.53	.113	9.64	6.80	.0364	.0363	12.0	12.0	11.3	8.02
20.	1.88	1.88	1.37	.899	.515	.981		11.1	.142	11.2	7.39	.0262	.0262	13.1	13.1	12.6	8.32
30.	1.37	1.37	1.02	.578	.347	.792		13.3	.185	13.5	8.05	.0169	.0169	14.9	14.9	14.5	8.64
40.	1.09	1.09	.828	.411	.262	.679		14.8	.217	15.0	8.08	.0124	.0124	16.1	16.1	15.8	8.50
50.	.910	.910	.701	.311	.210	.599		15.9	.240	16.1	7.94	.00971	.00970	17.0	17.0	16.8	8.26
60.	.784	.784	.608	.244	.175	.540		16.8	.259	17.1	7.85	.00799	.00799	17.9	17.9	17.7	8.10
80.	.618	.618	.486	.165	.132	.453		18.0	.287	18.3	7.59	.00587	.00587	18.9	18.9	18.8	7.76
100.	.513	.513	.408	.122	.106	.391		19.0	.307	19.3	7.28	.00460	.00460	19.8	19.8	19.7	7.41

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(cm²/g = 0.004006 x barns/atom)

E (MeV)	$(\frac{\mu}{\rho})^{KN}_{inc,t}$	$(\frac{\mu}{\rho})^{BD}_{inc,t}$	$(\frac{\mu}{\rho})^{KN}_{inc,a}$	$(\frac{\mu}{\rho})^{BD}_{inc,a}$	$(\frac{\mu}{\rho})^{KN}_{inc,s}$	$(\frac{\mu}{\rho})^{BD}_{inc,s}$	$(\frac{\mu}{\rho})_{coh}$	$(\frac{\mu}{\rho})_{\kappa,n}$	$(\frac{\mu}{\rho})_{\kappa,e}$	$(\frac{\mu}{\rho})_{\kappa,t}$	$(\frac{\mu}{\rho})_{\kappa,a}$	$(\frac{\mu}{\rho})_{\tau,t}$	$(\frac{\mu}{\rho})_{\tau,a}$	$(\frac{\mu}{\rho})_{tot,t}$	$(\frac{\mu}{\rho})_{tot,t-coh}$	$(\frac{\mu}{\rho})_{tot,a}$	$(\frac{\mu}{\rho})_{tot,er}$
.001	.165	.00601	.000320	.0000117	.164	.00601	9.65					3660.	3660.	3670.	3660.	3660.	3660.
M_V .001078	.165	.00661	.000346	.0000139	.164	.00661	9.57					3080.	3080.	3090.	3080.	3080.	3080.
M_{IV} .001106	.165	.00681	.000355	.0000147	.164	.00681	9.53					9650.	9650.	9650.	9650.	9650.	9650.
M_{III} .001419	.164	.00917	.000453	.0000253	.164	.00913	9.25					9090.	9090.	9090.	9090.	9090.	9090.
.0015	.164	.00981	.000481	.0000286	.164	.00977	9.17					10300.	10300.	10300.	10300.	10300.	10300.
M_{II} .001541	.164	.0101	.000493	.0000302	.164	.0101	9.13					5610.	5610.	5610.	5610.	5610.	5610.
M_I .001723	.164	.0115	.000549	.0000383	.163	.0114	8.97					6450.	6450.	6450.	6450.	6450.	6450.
.002	.164	.0135	.000637	.0000525	.163	.0135	8.69					5410.	5410.	5410.	5410.	5410.	5410.
.003	.163	.0206	.000945	.000119	.162	.0205	7.69					5010.	5010.	5010.	5010.	5010.	5010.
.004	.163	.0272	.00125	.000209	.161	.0270	6.81					5930.	5930.	5930.	5930.	5930.	5930.
.005	.162	.0332	.00155	.000318	.161	.0329	5.97					4570.	4570.	4570.	4570.	4570.	4570.
.006	.161	.0385	.00185	.000441	.159	.0381	5.29					5530.	5530.	5530.	5530.	5530.	5530.
L_{III} .006716	.161	.0421	.00206	.000537	.159	.0417	4.89					3700.	3700.	3710.	3700.	3700.	3700.
L_{II} .007312	.161	.0449	.00223	.000621	.158	.0441	4.57					1270.	1270.	1280.	1270.	1270.	1270.
L_I .007736	.160	.0465	.00235	.000681	.158	.0457	4.37					593.	593.	601.	593.	593.	593.
.008	.160	.0477	.00242	.000721	.158	.0469	4.25					328.	328.	335.	328.	328.	328.
.01	.159	.0553	.00298	.00104	.156	.0541	3.43					202.	202.	207.	202.	202.	202.
.015	.156	.0705	.00433	.00195	.152	.0685	2.22					149.	149.	154.	149.	149.	149.
.02	.153	.0817	.00553	.00295	.148	.0789	1.58					469.	399.	473.	469.	469.	399.
.03	.148	.0949	.00773	.00493	.141	.0901	.917					365.	315.	370.	365.	365.	315.
.04	.144	.102	.00957	.00677	.134	.0949	.593					505.	433.	509.	505.	505.	433.
K .046834	.141	.105	.0108	.00801	.130	.0969	.465					437.	378.	441.	437.	437.	378.
.05	.139	.106	.0113	.00853	.128	.0973	.421					505.	437.	509.	505.	505.	437.
.06	.135	.108	.0127	.0101	.123	.0977	.314					457.	397.	461.	457.	457.	397.
.08	.129	.109	.0151	.0127	.113	.0957	.191					252.	225.	255.	252.	252.	225.
.1	.122	.107	.0169	.0148	.105	.0925	.127					83.7	77.7	86.1	83.7	83.7	77.7
.15	.110	.103	.0200	.0186	.0901	.0841	.0597					38.4	36.4	40.1	38.5	38.4	36.4
.2	.101	.0961	.0218	.0208	.0793	.0753	.0365					12.6	12.2	13.6	12.7	12.6	12.2
.3	.0877	.0853	.0237	.0230	.0641	.0625	.0157					5.65	5.49	6.33	5.77	5.65	5.49
.4	.0785	.0773	.0244	.0238	.0545	.0537	.00889					3.59	3.51	4.17	3.70	3.61	3.52
.5	.0717	.0709	.0245	.0240	.0473	.0469	.00577					20.6	6.73	21.2	20.7	20.6	6.73
.6	.0665	.0657	.0244	.0238	.0421	.0417	.00401					17.2	6.37	17.7	17.3	17.2	6.37
.8	.0585	.0581	.0239	.0232	.0345	.0349	.00229					10.5	4.97	10.9	10.6	10.5	4.97
1.	.0525	.0521	.0231	.0220	.0294	.0301	.00147					4.81	2.91	5.09	4.93	4.81	2.92
1.5	.0425	.0425	.0211	.0203	.0216	.0222	.000661	.00103		.00103	.000312	2.62	1.80	2.86	2.73	2.64	1.81
2.	.0363	.0363	.0193	.0182	.0171	.0181	.000371	.00343		.00343	.00157	.869	.685	1.03	.973	.889	.705
3.	.0286	.0286	.0165	.0151	.0121	.0135	.000167	.00853	.0000100	.00853	.00521	.395	.332	.525	.489	.417	.353
4.	.0239	.0239	.0145	.0129	.00937	.0110	.0000937	.0132	.0000409	.0133	.00893	.131	.117	.232	.216	.154	.140
5.	.0206	.0206	.0129	.0112	.00769	.00941	.0000609	.0170	.0000805	.0171	.0121	.0613	.0565	.147	.139	.0857	.0801
6.	.0182	.0182	.0117	.00985	.00649	.00837	.0000421	.0200	.000125	.0202	.0147	.0351	.0328	.112	.106	.0597	.0569
8.	.0149	.0149	.00993	.00797	.00497	.00693	.0000239	.0251	.000212	.0253	.0187	.0224	.0212	.0921	.0881	.0469	.0453
10.	.0127	.0127	.00869	.00657	.00401	.00613	.0000150	.0296	.000290	.0299	.0221	.0115	.0111	.0717	.0697	.0354	.0343
15.	.00941	.00941	.00669	.00473	.00273	.00469	.0000062	.0382	.000453	.0386	.0272	.00721	.00697	.0609	.0593	.0303	.0290
20.	.00753	.00753	.00549	.00360	.00206	.00393		.0445	.000569	.0449	.0296	.00345	.00337	.0477	.0469	.0256	.0240
30.	.00549	.00549	.00409	.00232	.00139	.00317		.0533	.000741	.0541	.0322	.00208	.00205	.0421	.0417	.0248	.0218
40.	.00437	.00437	.00332	.00165	.00105	.00272		.0593	.000869	.0601	.0324	.00112	.00111	.0384	.0382	.0262	.0214
50.	.00365	.00365	.00281	.00125	.000841	.00240		.0637	.000961	.0645	.0318	.000741	.000737	.0380	.0379	.0285	.0226
60.	.00314	.00314	.00244	.000977	.000701	.00216		.0673	.00104	.0685	.0314	.000549	.000545	.0383	.0383	.0306	.0230
80.	.00248	.00248	.00195	.000661	.000529	.00181		.0721	.00115	.0733	.0304	.000433	.000429	.0389	.0388	.0323	.0250
100.	.00206	.00206	.00163	.000489	.000425	.00157		.0761	.00123	.0773	.0292	.000304	.000303	.0405	.0405	.0356	.0270
												.000232	.000231	.0429	.0429	.0389	.0289
												.000146	.000145	.0481	.0481	.0453	.0321
												.000105	.000105	.0525	.0525	.0505	.0333
												.0000677	.0000677	.0597	.0597	.0581	.0346
												.0000497	.0000497	.0645	.0645	.0633	.0341
												.0000389	.0000389	.0681	.0681	.0673	.0331
												.0000320	.0000320	.0717	.0717	.0709	.0324
												.0000235	.0000235	.0757	.0757	.0753	.0311
												.0000184	.0000184	.0793	.0793	.0789	.0297

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(barns/atom)

E (MeV)	$\sigma^{KN}_{inc,t}$	$\sigma^{BD}_{inc,t}$	$\sigma^{KN}_{inc,a}$	$\sigma^{BD}_{inc,a}$	$\sigma^{KN}_{inc,s}$	$\sigma^{BD}_{inc,s}$	σ_{coh}	σ_{xn}	σ_{xe}	$\sigma_{x,t}$	$\sigma_{x,a}$	$\sigma_{\gamma,t}$	$\sigma_{\gamma,a}$	$\sigma_{tot,t}$	$\sigma_{tot,t-coh}$	$\sigma_{tot,a}$	$\sigma_{tot,en}$
.001	41.7	1.46	.0813	.00284	41.7	1.46	2490.					955000.	955000.	957000.	955000.	955000.	955000.
M_V .001131	41.7	1.71	.0919	.00377	41.6	1.71	2460.					728000.	728000.	730000.	728000.	728000.	728000.
												2280000.	2280000.	2280000.	2280000.	2280000.	2280000.
M_{IV} .001161	41.7	1.76	.0943	.00398	41.6	1.76	2450.					2140000.	2140000.	2140000.	2140000.	2140000.	2140000.
												2430000.	2430000.	2430000.	2430000.	2430000.	2430000.
M_{III} .001481	41.7	2.36	.120	.00680	41.5	2.35	2380.					1330000.	1330000.	1330000.	1330000.	1330000.	1330000.
												1540000.	1540000.	1540000.	1540000.	1540000.	1540000.
.0015	41.7	2.40	.122	.00700	41.5	2.39	2370.					1480000.	1480000.	1480000.	1480000.	1480000.	1480000.
M_{II} .001614	41.6	2.61	.131	.00819	41.5	2.60	2350.					1180000.	1180000.	1180000.	1180000.	1180000.	1180000.
												1410000.	1410000.	1410000.	1410000.	1410000.	1410000.
M_I .001800	41.6	2.95	.145	.0103	41.5	2.94	2300.					1080000.	1080000.	1080000.	1080000.	1080000.	1080000.
												1310000.	1310000.	1310000.	1310000.	1310000.	1310000.
.002	41.6	3.32	.161	.0129	41.4	3.31	2250.					997000.	997000.	999000.	997000.	997000.	997000.
.003	41.4	5.09	.240	.0295	41.2	5.06	2000.					340000.	340000.	342000.	340000.	340000.	340000.
.004	41.3	6.74	.318	.0519	40.9	6.69	1770.					158000.	158000.	160000.	158000.	158000.	158000.
.005	41.1	8.25	.394	.0790	40.7	8.17	1560.					87500.	87500.	89100.	87500.	87500.	87500.
.006	40.9	9.61	.469	.110	40.5	9.50	1380.					53900.	53900.	55300.	53900.	53900.	53900.
L_{III} .006977	40.8	10.8	.541	.143	40.3	10.7	1230.					36000.	36000.	37200.	36000.	36000.	36000.
												112000.	94800.	113000.	112000.	112000.	94800.
L_{II} .007618	40.7	11.5	.588	.166	40.1	11.3	1150.					86600.	74400.	87800.	86600.	86600.	74400.
												120000.	103000.	121000.	120000.	120000.	103000.
.008	40.6	11.9	.615	.180	40.0	11.7	1100.					106000.	91300.	107000.	106000.	106000.	91300.
L_I .008052	40.6	12.0	.619	.183	40.0	11.8	1090.					104000.	89700.	105000.	104000.	104000.	89700.
												120000.	103000.	121000.	120000.	120000.	103000.
.01	40.3	13.9	.756	.260	39.6	13.6	894.					66800.	59300.	67700.	66800.	66800.	59300.
.015	39.6	17.7	1.10	.490	38.5	17.2	577.					22100.	20500.	22700.	22100.	22100.	20500.
.02	38.9	20.6	1.40	.743	37.5	19.9	410.					10200.	9630.	10600.	10200.	10200.	9630.
.03	37.6	24.0	1.96	1.25	35.7	22.8	239.					3370.	3240.	3630.	3390.	3370.	3240.
.04	36.5	25.8	2.43	1.72	34.0	24.1	155.					1510.	1470.	1690.	1540.	1510.	1470.
K .048519	35.5	26.6	2.80	2.09	32.7	24.5	114.					871.	851.	1010.	898.	874.	853.
												4940.	1610.	5080.	4970.	4940.	1610.
.05	35.4	26.8	2.85	2.16	32.5	24.6	109.					4530.	1560.	4670.	4560.	4530.	1560.
.06	34.4	27.3	3.22	2.56	31.2	24.7	81.5					2780.	1260.	2890.	2810.	2780.	1260.
.08	32.6	27.5	3.82	3.22	28.8	24.3	49.7					1280.	756.	1360.	1310.	1280.	759.
.1	31.0	27.2	4.28	3.75	26.8	23.4	32.9					699.	470.	759.	726.	703.	474.
.15	27.9	26.0	5.07	4.72	22.9	21.3	15.5					230.	180.	272.	256.	235.	185.
.2	25.6	24.4	5.54	5.28	20.1	19.1	8.98					104.	87.0	137.	128.	110.	92.3
.3	22.3	21.7	6.00	5.85	16.3	15.8	4.09					34.5	30.7	60.3	56.2	40.5	36.5
.4	19.9	19.6	6.18	6.02	13.8	13.6	2.31					16.3	15.0	38.2	35.9	22.5	21.0
.5	18.2	18.0	6.21	6.08	12.0	11.9	1.50					9.30	8.69	28.8	27.3	15.5	14.8
.6	16.9	16.7	6.19	6.06	10.7	10.6	1.05					5.97	5.64	23.7	22.7	12.2	11.7
.8	14.8	14.7	6.05	5.88	8.75	8.82	.593					3.08	2.95	18.4	17.8	9.13	8.83
1.	13.3	13.2	5.85	5.56	7.45	7.64	.381					1.94	1.88	15.5	15.1	7.79	7.44
1.5	10.8	10.8	5.35	5.14	5.46	5.66	.172	.267		.267	.0812	.923	.903	12.2	12.0	6.54	6.12
2.	9.22	9.20	4.89	4.61	4.33	4.59	.0963	.890		.890	.409	.558	.549	10.7	10.6	6.34	5.57
3.	7.25	7.24	4.18	3.82	3.06	3.42	.0434	2.20	.00253	2.20	1.34	.300	.297	9.78	9.74	6.68	5.46
4.	6.06	6.06	3.68	3.27	2.38	2.79	.0244	3.40	.0104	3.41	2.30	.199	.197	9.69	9.67	7.29	5.77
5.	5.23	5.23	3.29	2.84	1.95	2.39	.0158	4.40	.0205	4.42	3.13	.148	.147	9.81	9.80	7.86	6.12
6.	4.63	4.63	2.98	2.50	1.65	2.13	.0110	5.19	.0317	5.22	3.79	.117	.116	9.98	9.97	8.32	6.41
8.	3.78	3.78	2.52	2.01	1.26	1.77	.00623	6.46	.0537	6.51	4.79	.0820	.0817	10.4	10.4	9.11	6.88
10.	3.22	3.22	2.20	1.65	1.02	1.57	.00392	7.60	.0738	7.67	5.64	.0622	.0620	11.0	11.0	9.93	7.35
15.	2.39	2.39	1.69	1.20	.692	1.19	.00160	9.80	.115	9.91	6.98	.0388	.0387	12.3	12.3	11.6	8.22
20.	1.91	1.91	1.39	.909	.524	1.00		11.4	.145	11.5	7.57	.0279	.0279	13.4	13.4	12.9	8.51
30.	1.39	1.39	1.04	.584	.352	.806		13.7	.188	13.9	8.24	.0180	.0180	15.3	15.3	15.0	8.84
40.	1.11	1.11	.842	.416	.266	.694		15.2	.220	15.4	8.23	.0132	.0132	16.5	16.5	16.3	8.66
50.	.925	.925	.712	.315	.213	.610		16.4	.243	16.6	8.14	.0104	.0104	17.5	17.5	17.3	8.47
60.	.796	.796	.618	.247	.178	.549		17.3	.263	17.6	8.01	.00851	.00851	18.4	18.4	18.2	8.27
80.	.628	.628	.494	.167	.134	.461		18.6	.291	18.9	7.78	.00628	.00628	19.5	19.5	19.4	7.95
100.	.522	.522	.414	.123	.108	.399		19.6	.312	19.9	7.47	.00492	.00492	20.4	20.4	20.3	7.60

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(cm²/g = 0.003963 x barns/atom)

E (MeV)	$(\frac{\mu}{\rho})^{KN}_{inc,t}$	$(\frac{\mu}{\rho})^{BD}_{inc,t}$	$(\frac{\mu}{\rho})^{KN}_{inc,a}$	$(\frac{\mu}{\rho})^{BD}_{inc,a}$	$(\frac{\mu}{\rho})^{KN}_{inc,s}$	$(\frac{\mu}{\rho})^{BD}_{inc,s}$	$(\frac{\mu}{\rho})_{coh}$	$(\frac{\mu}{\rho})_{\kappa n}$	$(\frac{\mu}{\rho})_{\kappa e}$	$(\frac{\mu}{\rho})_{\kappa,t}$	$(\frac{\mu}{\rho})_{\kappa,a}$	$(\frac{\mu}{\rho})_{r,t}$	$(\frac{\mu}{\rho})_{r,a}$	$(\frac{\mu}{\rho})_{tot,t}$	$(\frac{\mu}{\rho})_{tot,t-coh}$	$(\frac{\mu}{\rho})_{tot,a}$	$(\frac{\mu}{\rho})_{tot,en}$
.001	.165	.00579	.000322	.0000113	.165	.00579	9.87					3780.	3780.	3790.	3780.	3780.	3780.
M_V .001131	.165	.00678	.000364	.0000149	.165	.00678	9.75					2890.	2890.	2890.	2890.	2890.	2890.
												9040.	9040.	9040.	9040.	9040.	9040.
M_{IV} .001161	.165	.00697	.000374	.0000158	.165	.00697	9.71					8480.	8480.	8480.	8480.	8480.	8480.
												9630.	9630.	9630.	9630.	9630.	9630.
M_{III} .001481	.165	.00935	.000476	.0000269	.164	.00931	9.43					5270.	5270.	5270.	5270.	5270.	5270.
												6100.	6100.	6100.	6100.	6100.	6100.
.0015	.165	.00951	.000483	.0000277	.164	.00947	9.39					5870.	5870.	5870.	5870.	5870.	5870.
M_{II} .001614	.165	.0103	.000519	.0000325	.164	.0103	9.31					4680.	4680.	4680.	4680.	4680.	4680.
												5590.	5590.	5590.	5590.	5590.	5590.
M_I .001800	.165	.0117	.000575	.0000408	.164	.0117	9.11					4280.	4280.	4280.	4280.	4280.	4280.
												5190.	5190.	5190.	5190.	5190.	5190.
.002	.165	.0132	.000638	.0000511	.164	.0131	8.92					3950.	3950.	3960.	3950.	3950.	3950.
.003	.164	.0202	.000951	.000117	.163	.0201	7.93					1350.	1350.	1360.	1350.	1350.	1350.
.004	.164	.0267	.00126	.000206	.162	.0265	7.01					626.	626.	634.	626.	626.	626.
.005	.163	.0327	.00156	.000313	.161	.0324	6.18					347.	347.	353.	347.	347.	347.
.006	.162	.0381	.00186	.000436	.161	.0376	5.47					214.	214.	219.	214.	214.	214.
L_{III} .006977	.162	.0428	.00214	.000567	.160	.0424	4.87					143.	143.	147.	143.	143.	143.
												444.	376.	448.	444.	444.	376.
L_{II} .007618	.161	.0456	.00233	.000658	.159	.0448	4.56					343.	295.	348.	343.	343.	295.
												476.	408.	480.	476.	476.	408.
.008	.161	.0472	.00244	.000713	.159	.0464	4.36					420.	362.	424.	420.	420.	362.
L_I .008052	.161	.0476	.00245	.000725	.159	.0468	4.32					412.	355.	416.	412.	412.	355.
												476.	408.	480.	476.	476.	408.
.01	.160	.0551	.00300	.00103	.157	.0539	3.54					265.	235.	268.	265.	265.	235.
.015	.157	.0701	.00436	.00194	.153	.0682	2.29					87.6	81.2	90.0	87.6	87.6	81.2
.02	.154	.0816	.00555	.00294	.149	.0789	1.62					40.4	38.2	42.0	40.4	40.4	38.7
.03	.149	.0951	.00777	.00495	.141	.0904	.947					13.4	12.8	14.4	13.4	13.4	12.8
.04	.145	.102	.00963	.00682	.135	.0955	.614					5.98	5.83	6.70	6.10	5.98	5.83
K .048519	.141	.105	.0111	.00828	.130	.0971	.452					3.45	3.37	4.00	3.56	3.46	3.38
												19.6	6.38	20.1	19.7	19.6	6.38
.05	.140	.106	.0113	.00856	.129	.0975	.432					18.0	6.18	18.5	18.1	18.0	6.18
.06	.136	.108	.0128	.0101	.124	.0979	.323					11.0	4.99	11.5	11.1	11.0	4.99
.08	.129	.109	.0151	.0128	.114	.0963	.197					5.07	3.00	5.39	5.19	5.07	3.01
.1	.123	.108	.0170	.0149	.106	.0927	.130					2.77	1.86	3.01	2.88	2.79	1.88
.15	.111	.103	.0201	.0187	.0908	.0844	.0614					.911	.713	1.08	1.01	.931	.733
.2	.101	.0967	.0220	.0209	.0797	.0757	.0356					.412	.345	.543	.507	.436	.366
.3	.0884	.0860	.0238	.0232	.0646	.0626	.0162					.137	.122	.239	.223	.161	.145
.4	.0789	.0777	.0245	.0239	.0547	.0539	.00915					.0646	.0594	.151	.142	.0892	.0832
.5	.0721	.0713	.0246	.0241	.0476	.0472	.00594					.0369	.0344	.114	.108	.0614	.0587
.6	.0670	.0662	.0245	.0240	.0424	.0420	.00416					.0237	.0224	.0939	.0900	.0483	.0464
.8	.0587	.0583	.0240	.0233	.0347	.0350	.00235					.0122	.0117	.0729	.0705	.0362	.0350
1.	.0527	.0523	.0232	.0220	.0295	.0303	.00151					.00769	.00745	.0614	.0598	.0309	.0295
1.5	.0428	.0428	.0212	.0204	.0216	.0224	.000682	.00106		.00106	.000322	.00366	.00358	.0483	.0476	.0259	.0247
2.	.0365	.0365	.0194	.0183	.0172	.0182	.000382	.00353		.00353	.00162	.00221	.00218	.0424	.0420	.0251	.0221
3.	.0287	.0287	.0166	.0151	.0121	.0136	.000172	.00872	.0000100	.00872	.00531	.00119	.00118	.0388	.0386	.0265	.0216
4.	.0240	.0240	.0146	.0130	.00943	.0111	.0000967	.0135	.0000412	.0135	.00911	.000789	.000781	.0384	.0383	.0289	.0229
5.	.0207	.0207	.0130	.0113	.00773	.00947	.0000626	.0174	.0000812	.0175	.0124	.000587	.000583	.0389	.0388	.0311	.0247
6.	.0183	.0183	.0118	.00991	.00654	.00844	.0000436	.0206	.000126	.0207	.0150	.000464	.000460	.0396	.0395	.0330	.0254
8.	.0150	.0150	.00999	.00797	.00499	.00701	.0000247	.0256	.000213	.0258	.0190	.000325	.000324	.0412	.0412	.0361	.0273
10.	.0128	.0128	.00872	.00654	.00404	.00622	.0000155	.0301	.000292	.0304	.0224	.000246	.000246	.0436	.0436	.0394	.0291
15.	.00947	.00947	.00670	.00476	.00274	.00472	.0000063	.0388	.000456	.0393	.0277	.000154	.000153	.0487	.0487	.0460	.0326
20.	.00757	.00757	.00551	.00360	.00208	.00396		.0452	.000575	.0456	.0300	.000111	.000111	.0531	.0531	.0511	.0337
30.	.00551	.00551	.00412	.00231	.00139	.00319		.0543	.000745	.0551	.0327	.0000713	.0000713	.0606	.0606	.0594	.0350
40.	.00440	.00440	.00334	.00165	.00105	.00275		.0602	.000872	.0610	.0326	.0000523	.0000523	.0654	.0654	.0646	.0343
50.	.00367	.00367	.00282	.00125	.000844	.00242		.0650	.000963	.0658	.0323	.0000412	.0000412	.0694	.0694	.0686	.0336
60.	.00315	.00315	.00245	.000979	.000705	.00218		.0686	.00104	.0697	.0317	.0000337	.0000337	.0729	.0729	.0721	.0328
80.	.00249	.00249	.00196	.000662	.000531	.00183		.0737	.00115	.0749	.0308	.0000249	.0000249	.0773	.0773	.0769	.0315
100.	.00207	.00207	.00164	.000487	.000428	.00158		.0777	.00124	.0789	.0296	.0000195	.0000195	.0808	.0808	.0804	.0301

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(barns/atom)

E (MeV)	KN $\sigma_{inc,t}$	BD $\sigma_{inc,t}$	KN $\sigma_{inc,a}$	BD $\sigma_{inc,a}$	KN $\sigma_{inc,s}$	BD $\sigma_{inc,s}$	σ_{coh}	σ_{x_n}	σ_{x_e}	$\sigma_{x,t}$	$\sigma_{x,a}$	$\sigma_{\gamma,t}$	$\sigma_{\gamma,a}$	$\sigma_{tot,t}$	$\sigma_{tot,t-coh}$	$\sigma_{tot,a}$	$\sigma_{tot,en}$
.001	42.4	1.45	.0826	.00282	42.3	1.45	2570.					1000000.	1000000.	1000000.	1000000.	1000000.	1000000.
M_V .001185	42.4	1.80	.0978	.00415	42.3	1.80	2530.					691000.	691000.	691000.	691000.	691000.	691000.
												2160000.	2160000.	2160000.	2160000.	2160000.	2160000.
M_{IV} .001217	42.4	1.86	.100	.00441	42.3	1.86	2520.					2030000.	2030000.	2030000.	2030000.	2030000.	2030000.
												2300000.	2300000.	2300000.	2300000.	2300000.	2300000.
.0015	42.3	2.39	.123	.00697	42.2	2.38	2450.					1360000.	1360000.	1360000.	1360000.	1360000.	1360000.
M_{III} .001544	42.3	2.47	.127	.00741	42.2	2.46	2440.					1280000.	1280000.	1280000.	1280000.	1280000.	1280000.
												1470000.	1470000.	1470000.	1470000.	1470000.	1470000.
M_{II} .001688	42.3	2.73	.139	.00895	42.2	2.72	2400.					1130000.	1130000.	1130000.	1130000.	1130000.	1130000.
												1340000.	1340000.	1340000.	1340000.	1340000.	1340000.
M_I .001881	42.3	3.08	.154	.0112	42.1	3.07	2350.					1030000.	1030000.	1030000.	1030000.	1030000.	1030000.
												1240000.	1240000.	1240000.	1240000.	1240000.	1240000.
.002	42.2	3.30	.164	.0128	42.1	3.29	2320.					1060000.	1060000.	1060000.	1060000.	1060000.	1060000.
.003	42.1	5.08	.244	.0294	41.8	5.05	2060.					360000.	360000.	362000.	360000.	360000.	360000.
.004	41.9	6.74	.323	.0519	41.6	6.69	1820.					168000.	168000.	170000.	168000.	168000.	168000.
.005	41.8	8.25	.400	.0790	41.4	8.17	1610.					93700.	93700.	95300.	93700.	93700.	93700.
.006	41.6	9.62	.476	.110	41.1	9.51	1430.					57900.	57900.	59300.	57900.	57900.	57900.
L_{III} .007243	41.4	11.1	.569	.153	40.8	10.9	1240.					34900.	34900.	36200.	34900.	34900.	34900.
												107000.	90100.	108000.	107000.	107000.	90100.
L_{II} .007930	41.3	11.9	.620	.179	40.7	11.7	1150.					82500.	70600.	83700.	82500.	82500.	70600.
												114000.	97000.	115000.	114000.	114000.	97000.
.008	41.3	12.0	.625	.182	40.7	11.8	1140.					111000.	94600.	112000.	111000.	111000.	94600.
L_I .008375	41.2	12.4	.652	.196	40.6	12.2	1100.					99100.	85100.	100000.	99100.	99100.	85100.
												114000.	97700.	115000.	114000.	114000.	97700.
.01	41.0	14.0	.768	.262	40.2	13.7	927.					70800.	62300.	71700.	70800.	70800.	62300.
.015	40.2	17.9	1.11	.495	39.1	17.4	598.					23400.	21500.	24000.	23400.	23400.	21500.
.02	39.5	20.7	1.43	.747	38.1	20.0	425.					10800.	10200.	11200.	10800.	10800.	10200.
.03	38.2	24.2	1.99	1.26	36.3	22.9	248.					3580.	3440.	3850.	3600.	3590.	3440.
.04	37.0	26.1	2.47	1.74	34.6	24.4	161.					1610.	1560.	1800.	1640.	1610.	1560.
.05	35.9	27.1	2.90	2.19	33.0	24.9	113.					859.	838.	999.	886.	862.	840.
K .050239	35.9	27.1	2.91	2.20	33.0	24.9	112.					845.	825.	984.	872.	848.	827.
												4750.	1540.	4890.	4780.	4750.	1540.
.06	34.9	27.6	3.28	2.59	31.6	25.0	84.7					2920.	1270.	3030.	2950.	2920.	1270.
.08	33.1	27.9	3.88	3.27	29.2	24.6	51.7					1360.	783.	1440.	1390.	1360.	786.
.1	31.5	27.6	4.35	3.81	27.2	23.8	34.2					740.	489.	802.	768.	744.	493.
.15	28.4	26.4	5.15	4.79	23.2	21.6	16.1					244.	189.	286.	270.	249.	194.
.2	26.0	24.8	5.62	5.36	20.4	19.4	9.34					110.	91.3	144.	135.	116.	96.7
.3	22.6	22.0	6.10	5.93	16.5	16.1	4.25					37.0	32.8	63.3	59.0	43.1	38.7
.4	20.3	19.9	6.28	6.11	14.0	13.8	2.41					17.4	15.9	39.7	37.3	23.7	22.0
.5	18.5	18.3	6.31	6.19	12.2	12.1	1.56					9.90	9.23	29.8	28.2	16.2	15.4
.6	17.1	17.0	6.29	6.15	10.8	10.8	1.09					6.41	6.05	24.5	23.4	12.7	12.2
.8	15.0	14.9	6.15	5.96	8.89	8.94	.620					3.30	3.16	18.8	18.2	9.45	9.12
1.	13.5	13.5	5.95	5.68	7.57	7.82	.396					2.08	2.01	16.0	15.6	8.03	7.69
1.5	11.0	11.0	5.43	5.24	5.55	5.76	.179	.279		.279	.0848	.990	.968	12.4	12.3	6.70	6.29
2.	9.36	9.35	4.97	4.68	4.39	4.67	.100	.925		.925	.425	.600	.590	11.0	10.9	6.49	5.69
3.	7.37	7.36	4.25	3.88	3.11	3.48	.0451	2.28	.00257	2.28	1.39	.323	.319	10.0	9.96	6.85	5.59
4.	6.16	6.16	3.74	3.32	2.42	2.84	.0253	3.50	.0106	3.51	2.37	.214	.212	9.91	9.88	7.46	5.90
5.	5.32	5.32	3.34	2.88	1.98	2.44	.0165	4.51	.0208	4.53	3.21	.158	.157	10.0	10.0	8.03	6.25
6.	4.70	4.70	3.03	2.53	1.67	2.17	.0114	5.32	.0322	5.35	3.88	.124	.123	10.2	10.2	8.50	6.51
8.	3.84	3.84	2.56	2.04	1.28	1.80	.00848	6.67	.0544	6.72	4.94	.0869	.0865	10.7	10.6	9.37	7.07
10.	3.27	3.27	2.24	1.67	1.04	1.60	.00610	7.81	.0749	7.88	5.79	.0666	.0664	11.2	11.2	10.2	7.53
15.	2.42	2.42	1.72	1.21	.703	1.21	.00167	10.1	.117	10.2	7.17	.0417	.0416	12.7	12.7	12.0	8.42
20.	1.94	1.94	1.41	.918	.532	1.02		11.8	.147	11.9	7.81	.0300	.0299	13.9	13.9	13.3	8.76
30.	1.42	1.42	1.06	.595	.358	.825		14.1	.191	14.3	8.45	.0193	.0193	15.7	15.7	15.4	9.06
40.	1.13	1.13	.855	.421	.270	.709		15.7	.223	15.9	8.46	.0141	.0141	17.0	17.0	16.8	8.90
50.	.940	.940	.723	.320	.216	.620		16.8	.247	17.0	8.28	.0111	.0111	18.0	18.0	17.7	8.61
60.	.809	.809	.628	.249	.181	.560		17.8	.266	18.1	8.20	.00914	.00913	18.9	18.9	18.7	8.46
80.	.638	.638	.502	.169	.136	.469		19.1	.295	19.4	7.95	.00670	.00670	20.0	20.0	19.9	8.13
100.	.530	.530	.421	.125	.109	.405		20.1	.316	20.4	7.59	.00527	.00527	20.9	20.9	20.8	7.72

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(cm^2/g = 0.003830 x barns/atom)

E (MeV)	$(\frac{\mu}{\rho})^{KN}_{inc,t}$	$(\frac{\mu}{\rho})^{BD}_{inc,t}$	$(\frac{\mu}{\rho})^{KN}_{inc,a}$	$(\frac{\mu}{\rho})^{BD}_{inc,a}$	$(\frac{\mu}{\rho})^{KN}_{inc,s}$	$(\frac{\mu}{\rho})^{BD}_{inc,s}$	$(\frac{\mu}{\rho})_{coh}$	$(\frac{\mu}{\rho})_{\kappa_n}$	$(\frac{\mu}{\rho})_{\kappa_e}$	$(\frac{\mu}{\rho})_{\kappa,t}$	$(\frac{\mu}{\rho})_{\kappa,a}$	$(\frac{\mu}{\rho})_{\tau,t}$	$(\frac{\mu}{\rho})_{\tau,a}$	$(\frac{\mu}{\rho})_{tot,t}$	$(\frac{\mu}{\rho})_{tot,t-coh}$	$(\frac{\mu}{\rho})_{tot,a}$	$(\frac{\mu}{\rho})_{tot,en}$
.001	.162	.00555	.000316	.0000108	.162	.00555	9.84					3830.	3830.	3830.	3830.	3830.	3830.
M_V .001185	.162	.00689	.000375	.0000159	.162	.00689	9.69					2650.	2650.	2660.	2650.	2650.	2650.
												8270.	8270.	8270.	8270.	8270.	8270.
M_{IV} .001217	.162	.00712	.000383	.0000169	.162	.00712	9.65					7770.	7770.	7770.	7770.	7770.	7770.
												8810.	8810.	8810.	8810.	8810.	8810.
.0015	.162	.00915	.000471	.0000267	.162	.00912	9.38					5210.	5210.	5210.	5210.	5210.	5210.
M_{III} .001544	.162	.00946	.000486	.0000284	.162	.00942	9.35					4900.	4900.	4900.	4900.	4900.	4900.
												5630.	5630.	5630.	5630.	5630.	5630.
M_{II} .001688	.162	.0105	.000532	.0000343	.162	.0104	9.19					4330.	4330.	4330.	4330.	4330.	4330.
												5130.	5130.	5130.	5130.	5130.	5130.
M_I .001881	.162	.0118	.000590	.0000429	.161	.0118	9.00					3940.	3940.	3940.	3940.	3940.	3940.
												4750.	4750.	4750.	4750.	4750.	4750.
.002	.162	.0126	.000628	.0000490	.161	.0126	8.89					4060.	4060.	4060.	4060.	4060.	4060.
.003	.161	.0195	.000935	.000113	.160	.0193	7.89					1380.	1380.	1390.	1380.	1380.	1380.
.004	.160	.0258	.00124	.000199	.159	.0256	6.97					643.	643.	651.	643.	643.	643.
.005	.160	.0316	.00153	.000303	.159	.0313	6.17					359.	359.	365.	359.	359.	359.
.006	.159	.0368	.00182	.000421	.157	.0364	5.48					222.	222.	227.	222.	222.	222.
L_{III} .007243	.159	.0425	.00218	.000586	.156	.0417	4.75					134.	134.	139.	134.	134.	134.
												410.	345.	414.	410.	410.	345.
L_{II} .007930	.158	.0456	.00237	.000686	.156	.0448	4.40					316.	270.	321.	316.	316.	270.
												437.	372.	440.	437.	437.	372.
.008	.158	.0460	.00239	.000697	.156	.0452	4.37					425.	362.	429.	425.	425.	362.
L_I .008375	.158	.0475	.00250	.000751	.155	.0467	4.21					384.	326.	383.	380.	380.	326.
												437.	374.	440.	437.	437.	374.
.01	.157	.0536	.00294	.00100	.154	.0525	3.55					271.	239.	275.	271.	271.	239.
.015	.154	.0686	.00425	.00190	.150	.0666	2.29					89.6	82.3	91.9	89.6	89.6	82.3
.02	.151	.0793	.00548	.00286	.146	.0766	1.63					41.4	39.1	42.9	41.4	41.4	39.1
.03	.146	.0927	.00762	.00483	.139	.0877	.950					13.7	13.2	14.7	13.8	13.7	13.2
.04	.142	.100	.00946	.00666	.133	.0935	.617					6.17	5.97	6.89	6.28	6.17	5.97
.05	.137	.104	.0111	.00839	.126	.0954	.433					3.29	3.21	3.83	3.39	3.30	3.22
K .050239	.137	.104	.0111	.00843	.126	.0954	.429					3.24	3.16	3.77	3.34	3.25	3.17
												18.2	5.90	18.7	18.3	18.2	5.90
.06	.134	.106	.0126	.00992	.121	.0957	.324					11.2	4.86	11.6	11.3	11.2	4.86
.08	.127	.107	.0149	.0125	.112	.0942	.198					5.21	3.00	5.52	5.32	5.21	3.01
.1	.121	.106	.0167	.0146	.104	.0912	.131					2.83	1.87	3.07	2.94	2.85	1.89
.15	.109	.101	.0197	.0183	.0889	.0827	.0617					.0935	.724	1.10	1.03	.954	.743
.2	.0996	.0950	.0215	.0205	.0781	.0743	.0358					.0421	.350	.552	.517	.444	.370
.3	.0866	.0843	.0234	.0227	.0632	.0617	.0163					.0142	.126	.242	.226	.165	.148
.4	.0777	.0762	.0241	.0234	.0536	.0529	.00923					.0666	.0609	.152	.143	.0908	.0843
.5	.0709	.0701	.0242	.0237	.0467	.0463	.00597					.0379	.0354	.114	.108	.0620	.0590
.6	.0655	.0651	.0241	.0236	.0414	.0414	.00417					.0246	.0232	.0938	.0896	.0486	.0467
.8	.0575	.0571	.0236	.0228	.0340	.0342	.00237					.0126	.0121	.0720	.0697	.0362	.0349
1.	.0517	.0517	.0228	.0218	.0290	.0300	.00152					.00797	.00770	.0613	.0597	.0308	.0295
1.5	.0421	.0421	.0208	.0201	.0213	.0221	.000686	.00107		.00107	.000325	.00379	.00371	.0475	.0471	.0257	.0241
2.	.0358	.0358	.0190	.0179	.0168	.0179	.000383	.00354		.00354	.00163	.00230	.00226	.0421	.0417	.0249	.0218
3.	.0282	.0282	.0163	.0149	.0119	.0133	.000173	.00873	.00000984	.00873	.00532	.00124	.00122	.0383	.0381	.0262	.0214
4.	.0236	.0236	.0143	.0127	.00927	.0109	.0000969	.0134	.0000406	.0134	.00908	.000820	.000812	.0380	.0378	.0286	.0226
5.	.0204	.0204	.0128	.0110	.00758	.00935	.0000632	.0173	.0000797	.0173	.0123	.000605	.000601	.0383	.0383	.0308	.0239
6.	.0180	.0180	.0116	.00969	.00640	.00831	.0000437	.0204	.000123	.0205	.0149	.000475	.000471	.0391	.0391	.0326	.0250
8.	.0147	.0147	.00980	.00781	.00490	.00689	.0000248	.0255	.000208	.0257	.0189	.000333	.000331	.0410	.0406	.0359	.0271
10.	.0125	.0125	.00858	.00640	.00398	.00613	.0000157	.0299	.000287	.0302	.0222	.000255	.000254	.0429	.0429	.0391	.0288
15.	.00927	.00927	.00659	.00463	.00269	.00463	.0000064	.0387	.000448	.0391	.0275	.000160	.000159	.0486	.0486	.0480	.0322
20.	.00743	.00743	.00540	.00352	.00204	.00391		.0452	.000563	.0456	.0299	.000115	.000115	.0532	.0532	.0509	.0336
30.	.00544	.00544	.00406	.00228	.00137	.00316		.0540	.000732	.0548	.0324	.0000739	.0000739	.0601	.0601	.0590	.0347
40.	.00433	.00433	.00327	.00161	.00103	.00272		.0601	.000854	.0609	.0324	.0000540	.0000540	.0651	.0651	.0643	.0341
50.	.00360	.00360	.00277	.00123	.000827	.00237		.0643	.000946	.0651	.0317	.0000425	.0000425	.0689	.0689	.0678	.0330
60.	.00310	.00310	.00241	.000954	.000693	.00214		.0682	.00102	.0693	.0314	.0000350	.0000350	.0724	.0724	.0716	.0324
80.	.00244	.00244	.00192	.000647	.000521	.00180		.0732	.00113	.0743	.0304	.0000257	.0000257	.0766	.0766	.0762	.0311
100.	.00203	.00203	.00161	.000479	.000417	.00155		.0770	.00121	.0781	.0291	.0000202	.0000202	.0800	.0800	.0797	.0296

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(barns/atom)

E (MeV)	$\sigma^{KN}_{inc,t}$	$\sigma^{BD}_{inc,t}$	$\sigma^{KN}_{inc,a}$	$\sigma^{BD}_{inc,a}$	$\sigma^{KN}_{inc,s}$	$\sigma^{BD}_{inc,s}$	σ_{coh}	σ_{xn}	σ_{xe}	$\sigma_{x,t}$	$\sigma_{x,a}$	$\sigma_{r,t}$	$\sigma_{r,a}$	$\sigma_{tot,t}$	$\sigma_{tot,t-coh}$	$\sigma_{tot,a}$	$\sigma_{tot,en}$
.001	43.1	1.44	.0839	.00281	43.0	1.44	2660.					1050000.	1050000.	1050000.	1050000.	1050000.	1050000.
M_V .001240	43.0	1.89	.104	.00456	42.9	1.89	2600.					657000.	657000.	660000.	657000.	657000.	657000.
												2050000.	2050000.	2050000.	2050000.	2050000.	2050000.
M_{IV} .001274	43.0	1.95	.107	.00484	42.9	1.95	2600.					1930000.	1930000.	1930000.	1930000.	1930000.	1930000.
												2190000.	2190000.	2190000.	2190000.	2190000.	2190000.
.0015	43.0	2.37	.125	.00691	42.9	2.36	2540.					1450000.	1450000.	1450000.	1450000.	1450000.	1450000.
M_{III} .001610	43.0	2.57	.134	.00804	42.8	2.56	2510.					1220000.	1220000.	1220000.	1220000.	1220000.	1220000.
												1400000.	1400000.	1400000.	1400000.	1400000.	1400000.
M_{II} .001765	42.9	2.86	.147	.00980	42.8	2.85	2470.					1070000.	1070000.	1070000.	1070000.	1070000.	1070000.
												1280000.	1280000.	1280000.	1280000.	1280000.	1280000.
M_I .001963	42.9	3.22	.163	.0123	42.7	3.21	2420.					987000.	987000.	989000.	987000.	987000.	987000.
												1180000.	1180000.	1180000.	1180000.	1180000.	1180000.
.002	42.9	3.28	.166	.0127	42.7	3.27	2410.					1130000.	1130000.	1130000.	1130000.	1130000.	1130000.
.003	42.7	5.06	.248	.0293	42.5	5.03	2160.					388000.	388000.	390000.	388000.	388000.	388000.
.004	42.6	6.73	.328	.0518	42.2	6.68	1910.					179000.	179000.	181000.	179000.	179000.	179000.
.005	42.4	8.25	.406	.0790	42.0	8.17	1690.					99000.	99000.	101000.	99000.	99000.	99000.
.006	42.2	9.63	.484	.110	41.8	9.52	1500.					61500.	61500.	63000.	61500.	61500.	61500.
L_{III} .007514	42.0	11.5	.598	.164	41.4	11.3	1260.					33800.	33800.	35100.	33800.	33800.	33800.
												103000.	86400.	104000.	103000.	103000.	86400.
.008	41.9	12.0	.635	.182	41.3	11.8	1200.					85900.	72900.	87100.	85900.	85900.	72900.
L_{II} .008252	41.9	12.3	.653	.192	41.2	12.1	1170.					78600.	67100.	79800.	78600.	78600.	67100.
												109000.	92400.	110000.	109000.	109000.	92400.
L_I .008708	41.8	12.8	.687	.210	41.1	12.6	1110.					94600.	81000.	95700.	94600.	94600.	81000.
												109000.	93200.	110000.	109000.	109000.	93200.
.01	41.6	14.0	.780	.262	40.9	13.7	973.					75000.	65500.	76000.	75000.	75000.	65500.
.015	40.9	18.0	1.13	.498	39.8	17.5	626.					25000.	22900.	25600.	25000.	25000.	22900.
.02	40.2	20.9	1.45	.754	38.7	20.1	444.					11400.	10700.	11900.	11400.	11400.	10700.
.03	38.8	24.4	2.02	1.27	36.8	23.1	259.					3820.	3660.	4100.	3840.	3820.	3660.
.04	37.6	26.4	2.51	1.76	35.1	24.6	168.					1720.	1670.	1910.	1750.	1720.	1670.
.05	36.5	27.4	2.94	2.21	33.6	25.2	118.					913.	890.	1060.	940.	916.	892.
K .051996	36.3	27.6	3.02	2.30	33.3	25.3	111.					821.	801.	960.	849.	824.	803.
												4570.	1470.	4710.	4600.	4570.	1470.
.06	35.5	28.0	3.33	2.63	32.1	25.4	88.3					3080.	1270.	3200.	3110.	3080.	1270.
.08	33.6	28.2	3.94	3.30	29.7	24.9	53.8					1430.	801.	1510.	1440.	1430.	804.
.1	32.0	28.0	4.42	3.86	27.6	24.1	35.7					785.	509.	849.	813.	789.	513.
.15	28.8	26.8	5.23	4.86	23.6	21.9	16.8					260.	199.	304.	287.	265.	204.
.2	26.4	25.1	5.71	5.43	20.7	19.7	9.74					118.	97.2	153.	143.	124.	103.
.3	23.0	22.3	6.19	6.01	16.8	16.3	4.43					39.2	34.6	65.9	61.5	45.4	40.6
.4	20.6	20.2	6.38	6.20	14.2	14.0	2.51					18.5	16.9	41.2	38.7	24.9	23.1
.5	18.8	18.5	6.41	6.23	12.4	12.3	1.63					10.5	9.76	30.6	29.0	16.9	16.0
.6	17.4	17.2	6.39	6.23	11.0	11.0	1.13					6.82	6.42	25.1	24.0	13.2	12.6
.8	15.3	15.2	6.24	6.06	9.03	9.14	.645					3.52	3.37	19.4	18.7	9.76	9.43
1.	13.7	13.7	6.04	5.77	7.69	7.93	.412					2.22	2.14	16.3	15.9	8.26	7.91
1.5	11.2	11.1	5.52	5.27	5.64	5.83	.186	.290		.290	.0882	1.06	1.04	12.6	12.4	6.87	6.40
2.	9.51	9.50	5.05	4.75	4.46	4.75	.104	.963		.963	.443	.638	.627	11.2	11.1	6.65	5.82
3.	7.48	7.47	4.32	3.93	3.16	3.54	.0470	2.35	.00262	2.35	1.43	.345	.341	10.2	10.2	7.01	5.70
4.	6.25	6.25	3.79	3.36	2.46	2.89	.0264	3.61	.0107	3.62	2.44	.228	.226	10.1	10.1	7.64	6.03
5.	5.40	5.40	3.39	2.92	2.01	2.48	.0172	4.65	.0211	4.67	3.30	.170	.169	10.3	10.2	8.23	6.39
6.	4.77	4.77	3.07	2.57	1.70	2.20	.0119	5.49	.0327	5.52	4.00	.133	.132	10.4	10.4	8.72	6.70
8.	3.90	3.90	2.60	2.06	1.30	1.84	.00677	6.86	.0552	6.92	5.07	.0931	.0927	10.9	10.9	9.61	7.22
10.	3.32	3.32	2.27	1.70	1.05	1.62	.00427	8.05	.0760	8.13	5.96	.0712	.0709	11.5	11.5	10.5	7.73
15.	2.46	2.46	1.75	1.23	.714	1.23	.00173	10.3	.118	10.4	7.28	.0443	.0442	12.9	12.9	12.2	8.55
20.	1.98	1.98	1.44	.935	.540	1.05		12.1	.149	12.2	7.97	.0317	.0316	14.2	14.2	13.7	8.94
30.	1.44	1.44	1.07	.680	.363	.840		14.5	.194	14.7	8.65	.0205	.0205	16.2	16.2	15.8	9.27
40.	1.14	1.14	.868	.423	.274	.717		16.1	.226	16.3	8.64	.0150	.0150	17.5	17.5	17.2	9.08
50.	.954	.954	.734	.322	.220	.632		17.3	.251	17.6	8.48	.0118	.0118	18.6	18.6	18.3	8.81
60.	.822	.822	.638	.252	.184	.570		18.3	.270	18.6	8.39	.00975	.00974	19.4	19.4	19.2	8.65
80.	.648	.648	.510	.171	.138	.477		19.7	.300	20.0	8.14	.00718	.00718	20.7	20.7	20.5	8.32
100.	.538	.538	.427	.126	.111	.412		20.6	.321	20.9	7.74	.00563	.00563	21.4	21.4	21.3	7.87

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(cm^2/g = 0.003790 x barns/atom)

E (MeV)	$(\frac{\mu}{\rho})^{KN}_{inc,t}$	$(\frac{\mu}{\rho})^{BD}_{inc,t}$	$(\frac{\mu}{\rho})^{KN}_{inc,a}$	$(\frac{\mu}{\rho})^{BD}_{inc,a}$	$(\frac{\mu}{\rho})^{KN}_{inc,s}$	$(\frac{\mu}{\rho})^{BD}_{inc,s}$	$(\frac{\mu}{\rho})_{coh}$	$(\frac{\mu}{\rho})_{\kappa n}$	$(\frac{\mu}{\rho})_{\kappa e}$	$(\frac{\mu}{\rho})_{\kappa,t}$	$(\frac{\mu}{\rho})_{\kappa,a}$	$(\frac{\mu}{\rho})_{\tau,t}$	$(\frac{\mu}{\rho})_{\tau,a}$	$(\frac{\mu}{\rho})_{tot,t}$	$(\frac{\mu}{\rho})_{tot,t-coh}$	$(\frac{\mu}{\rho})_{tot,a}$	$(\frac{\mu}{\rho})_{tot,en}$
.001	.163	.00546	.000318	.0000106	.163	.00546	10.1					3980.	3980.	3980.	3980.	3980.	3980.
M_V .001240	.163	.00716	.000394	.0000173	.163	.00716	9.85					2490.	2490.	2500.	2490.	2490.	2490.
												7770.	7770.	7770.	7770.	7770.	7770.
M_{IV} .001274	.163	.00739	.000406	.0000183	.163	.00739	9.85					7310.	7310.	7310.	7310.	7310.	7310.
												8300.	8300.	8300.	8300.	8300.	8300.
.0015	.163	.00898	.000474	.0000262	.163	.00894	9.63					5500.	5500.	5500.	5500.	5500.	5500.
M_{III} .001610	.163	.00974	.000508	.0000305	.162	.00970	9.51					4620.	4620.	4620.	4620.	4620.	4620.
												5310.	5310.	5310.	5310.	5310.	5310.
M_{II} .001765	.163	.0108	.000557	.0000371	.162	.0108	9.36					4060.	4060.	4060.	4060.	4060.	4060.
												4850.	4850.	4850.	4850.	4850.	4850.
M_I .001963	.163	.0122	.000618	.0000466	.162	.0122	9.17					3740.	3740.	3750.	3740.	3740.	3740.
												4470.	4470.	4470.	4470.	4470.	4470.
.002	.163	.0124	.000629	.0000481	.162	.0124	9.13					4280.	4280.	4280.	4280.	4280.	4280.
.003	.162	.0192	.000940	.000111	.161	.0191	8.19					1470.	1470.	1480.	1470.	1470.	1470.
.004	.161	.0255	.00124	.000196	.160	.0253	7.24					678.	678.	686.	678.	678.	678.
.005	.161	.0313	.00154	.000299	.159	.0310	6.41					375.	375.	383.	375.	375.	375.
.006	.160	.0365	.00183	.000417	.158	.0361	5.69					233.	233.	239.	233.	233.	233.
L_{III} .007514	.159	.0436	.00227	.000622	.157	.0428	4.78					128.	128.	133.	128.	128.	128.
												390.	327.	394.	390.	390.	327.
.008	.159	.0455	.00241	.000690	.157	.0447	4.55					326.	276.	330.	326.	326.	276.
L_{II} .008252	.159	.0466	.00247	.000728	.156	.0459	4.43					298.	254.	302.	298.	298.	254.
												413.	350.	417.	413.	413.	350.
L_I .008708	.158	.0485	.00260	.000796	.156	.0478	4.21					359.	307.	363.	359.	359.	307.
												413.	353.	417.	413.	413.	353.
.01	.158	.0531	.00296	.000993	.155	.0519	3.69					284.	248.	288.	284.	284.	248.
.015	.155	.0682	.00428	.00189	.151	.0663	2.37					94.8	86.8	97.0	94.8	94.8	86.8
.02	.152	.0792	.00550	.00286	.147	.0762	1.68					43.2	40.6	45.1	43.2	43.2	40.6
.03	.147	.0925	.00766	.00481	.139	.0875	.982					14.5	13.9	15.5	14.6	14.5	13.9
.04	.143	.100	.00951	.00667	.133	.0932	.637					6.52	6.33	7.24	6.63	6.52	6.33
.05	.138	.104	.0111	.00838	.127	.0955	.447					3.46	3.37	4.02	3.56	3.47	3.38
K .051996	.138	.105	.0114	.00872	.126	.0959	.421					3.11	3.04	3.64	3.22	3.12	3.04
												17.3	5.57	17.9	17.4	17.3	5.57
.06	.135	.106	.0126	.00997	.122	.0963	.335					11.7	4.81	12.1	11.8	11.7	4.81
.08	.127	.107	.0149	.0125	.113	.0944	.204					5.42	3.04	5.72	5.53	5.42	3.05
.1	.121	.106	.0168	.0146	.105	.0913	.135					2.98	1.93	3.22	3.08	2.99	1.94
.15	.109	.102	.0198	.0184	.0894	.0830	.0637					.985	.754	1.15	1.09	1.00	.773
.2	.100	.0951	.0216	.0206	.0785	.0747	.0369					.447	.368	.580	.542	.470	.390
.3	.0872	.0845	.0235	.0228	.0637	.0618	.0168					.149	.131	.250	.233	.172	.154
.4	.0781	.0766	.0242	.0235	.0538	.0531	.00951					.0701	.0641	.156	.147	.0944	.0875
.5	.0713	.0701	.0243	.0236	.0470	.0466	.00618					.0398	.0370	.116	.110	.0641	.0606
.6	.0659	.0652	.0242	.0236	.0417	.0417	.00428					.0258	.0243	.0951	.0910	.0500	.0478
.8	.0580	.0576	.0236	.0230	.0342	.0346	.00244					.0133	.0128	.0735	.0709	.0370	.0357
1.	.0519	.0519	.0229	.0219	.0291	.0301	.00156					.00841	.00811	.0618	.0603	.0313	.0300
1.5	.0424	.0421	.0209	.0200	.0214	.0221	.000705	.00110		.00110	.000334	.00402	.00394	.0478	.0470	.0260	.0243
2.	.0360	.0360	.0191	.0180	.0169	.0180	.000394	.00365		.00365	.00168	.00242	.00238	.0424	.0421	.0252	.0221
3.	.0283	.0283	.0164	.0149	.0120	.0134	.000178	.00891	.00000993	.00891	.00542	.00131	.00129	.0387	.0387	.0266	.0216
4.	.0237	.0237	.0144	.0127	.00932	.0110	.000100	.0137	.0000406	.0137	.00925	.000864	.000847	.0383	.0383	.0290	.0229
5.	.0205	.0205	.0128	.0111	.00762	.00940	.0000652	.0176	.0000800	.0177	.0125	.000644	.000641	.0390	.0387	.0312	.0242
6.	.0181	.0181	.0116	.00974	.00644	.00834	.0000451	.0208	.000124	.0209	.0152	.000504	.000500	.0394	.0394	.0330	.0254
8.	.0148	.0148	.00985	.00781	.00493	.00697	.0000257	.0260	.000209	.0262	.0192	.000353	.000351	.0413	.0413	.0364	.0274
10.	.0126	.0126	.00860	.00644	.00398	.00614	.0000162	.0305	.000288	.0308	.0226	.000270	.000269	.0436	.0436	.0398	.0293
15.	.00932	.00932	.00663	.00466	.00271	.00466	.0000066	.0390	.000447	.0394	.0276	.000168	.000168	.0489	.0489	.0462	.0324
20.	.00750	.00750	.00546	.00354	.00205	.00398		.0459	.000565	.0462	.0302	.000120	.000120	.0538	.0538	.0519	.0339
30.	.00546	.00546	.00406	.00227	.00138	.00318		.0550	.000735	.0557	.0328	.0000777	.0000777	.0614	.0614	.0599	.0351
40.	.00432	.00432	.00329	.00160	.00104	.00272		.0610	.000857	.0618	.0327	.0000568	.0000568	.0663	.0663	.0652	.0344
50.	.00362	.00362	.00278	.00122	.000834	.00240		.0656	.000951	.0667	.0321	.0000447	.0000447	.0705	.0705	.0694	.0334
60.	.00312	.00312	.00242	.000955	.000697	.00216		.0694	.00102	.0705	.0318	.0000370	.0000369	.0735	.0735	.0728	.0328
80.	.00246	.00246	.00193	.000648	.000523	.00181		.0747	.00114	.0758	.0309	.0000272	.0000272	.0785	.0785	.0777	.0315
100.	.00204	.00204	.00162	.000478	.000421	.00156		.0781	.00122	.0792	.0293	.0000213	.0000213	.0811	.0811	.0807	.0298

66 DYSPROSIUM
(barns/atom)

E (MeV)	$\sigma^{KN}_{inc,t}$	$\sigma^{BD}_{inc,t}$	$\sigma^{KN}_{inc,a}$	$\sigma^{BD}_{inc,a}$	$\sigma^{KN}_{inc,s}$	$\sigma^{BD}_{inc,s}$	σ_{coh}	$\sigma_{\gamma n}$	$\sigma_{\gamma e}$	$\sigma_{\gamma,t}$	$\sigma_{\gamma,a}$	$\sigma_{\gamma,t}$	$\sigma_{\gamma,a}$	$\sigma_{tot,t}$	$\sigma_{tot,t-coh}$	$\sigma_{tot,a}$	$\sigma_{tot,en}$
.001	43.7	1.42	.0852	.00277	43.6	1.42	2750.					1100000.	1100000.	1100000.	1100000.	1100000.	1100000.
M_V .001295	43.7	1.98	.110	.00499	43.6	1.98	2680.					626000.	626000.	629000.	626000.	626000.	626000.
												1960000.	1960000.	1960000.	1960000.	1960000.	1960000.
M_{IV} .001332	43.7	2.04	.113	.00529	43.6	2.03	2670.					1840000.	1840000.	1840000.	1840000.	1840000.	1840000.
												2080000.	2080000.	2080000.	2080000.	2080000.	2080000.
.0015	43.6	2.35	.127	.00685	43.5	2.34	2630.					1540000.	1540000.	1540000.	1540000.	1540000.	1540000.
M_{III} .001676	43.6	2.68	.142	.00873	43.5	2.67	2580.					1170000.	1170000.	1170000.	1170000.	1170000.	1170000.
												1350000.	1350000.	1350000.	1350000.	1350000.	1350000.
M_{II} .001842	43.6	2.98	.156	.0107	43.4	2.97	2540.					1020000.	1020000.	1020000.	1020000.	1020000.	1020000.
												1220000.	1220000.	1220000.	1220000.	1220000.	1220000.
.002	43.6	3.27	.169	.0127	43.4	3.26	2500.					1000000.	1000000.	1000000.	1000000.	1000000.	1000000.
M_I .002046	43.6	3.35	.173	.0133	43.4	3.34	2490.					944000.	944000.	946000.	944000.	944000.	944000.
												1130000.	1130000.	1130000.	1130000.	1130000.	1130000.
.003	43.4	5.05	.252	.0293	43.1	5.02	2240.					412000.	412000.	414000.	412000.	412000.	412000.
.004	43.2	6.72	.333	.0517	42.9	6.67	1990.					192000.	192000.	194000.	192000.	192000.	192000.
.005	43.1	8.25	.412	.0790	42.6	8.17	1760.					106000.	106000.	108000.	106000.	106000.	106000.
.006	42.9	9.64	.491	.110	42.4	9.53	1560.					65600.	65600.	67200.	65600.	65600.	65600.
L_{III} .007790	42.6	11.8	.629	.174	42.0	11.6	1280.					32800.	32800.	34100.	32800.	32800.	32800.
												98400.	82100.	99700.	98400.	98400.	82100.
.008	42.6	12.0	.644	.182	41.9	11.8	1250.					90900.	76200.	92200.	90900.	90900.	76200.
L_{II} .008580	42.5	12.7	.688	.206	41.8	12.5	1170.					74900.	63600.	76100.	74900.	74900.	63600.
												104000.	87800.	105000.	104000.	104000.	87800.
L_I .009046	42.4	13.1	.723	.223	41.7	12.9	1120.					90400.	77000.	91500.	90400.	90400.	77000.
												104000.	88400.	105000.	104000.	104000.	88400.
.01	42.3	14.1	.792	.264	41.5	13.8	1010.					79300.	68600.	80300.	79300.	79300.	68600.
.015	41.5	18.1	1.15	.501	40.4	17.6	651.					26400.	24000.	27100.	26400.	26400.	24000.
.02	40.8	21.0	1.47	.758	39.3	20.2	461.					12200.	11400.	12700.	12200.	12200.	11400.
.03	39.4	24.7	2.05	1.29	37.4	23.4	269.					4090.	3910.	4380.	4110.	4090.	3910.
.04	38.2	26.7	2.55	1.78	35.6	24.9	175.					1840.	1780.	2040.	1870.	1840.	1780.
.05	37.1	27.8	2.99	2.24	34.1	25.6	123.					978.	952.	1130.	1010.	981.	954.
K .053788	36.6	28.0	3.14	2.40	33.5	25.6	109.					797.	777.	934.	825.	800.	779.
												4400.	1410.	4540.	4430.	4400.	1410.
.06	36.0	28.3	3.38	2.66	32.6	25.6	91.8					3260.	1280.	3380.	3290.	3260.	1280.
.08	34.1	28.6	4.00	3.35	30.1	25.3	56.0					1510.	821.	1590.	1540.	1510.	824.
.1	32.5	28.3	4.49	3.91	28.0	24.4	37.1					830.	527.	895.	858.	834.	531.
.15	29.3	27.1	5.31	4.92	24.0	22.2	17.5					275.	208.	320.	302.	280.	213.
.2	26.8	25.5	5.80	5.51	21.0	20.0	10.1					125.	102.	161.	150.	131.	108.
.3	23.3	22.7	6.29	6.12	17.0	16.6	4.61					41.7	36.6	69.0	64.4	48.0	42.7
.4	20.9	20.5	6.47	6.29	14.4	14.2	2.61					19.6	17.8	42.7	40.1	26.1	24.1
.5	19.1	18.8	6.51	6.34	12.6	12.5	1.69					11.3	10.5	31.8	30.1	17.8	16.8
.6	17.7	17.5	6.49	6.33	11.2	11.2	1.18					7.32	6.87	26.0	24.8	13.8	13.2
.8	15.5	15.4	6.34	6.14	9.17	9.26	.670					3.78	3.61	19.8	19.2	10.1	9.75
1.	13.9	13.9	6.13	5.84	7.81	8.06	.430					2.38	2.29	16.7	16.3	8.51	8.13
1.5	11.3	11.3	5.60	5.37	5.72	5.93	.193	.301		.301	.0915	1.14	1.11	12.9	12.7	7.04	6.57
2.	9.66	9.64	5.13	4.82	4.53	4.82	.108	1.00		1.00	.460	.685	.672	11.4	11.3	6.81	5.95
3.	7.60	7.59	4.38	3.99	3.21	3.60	.049	2.44	.00265	2.44	1.49	.369	.365	10.4	10.4	7.19	5.84
4.	6.35	6.35	3.85	3.41	2.50	2.94	.0275	3.72	.0109	3.73	2.51	.243	.241	10.4	10.3	7.82	6.16
5.	5.48	5.48	3.44	2.96	2.04	2.52	.0179	4.80	.0214	4.82	3.40	.181	.180	10.5	10.5	8.44	6.54
6.	4.85	4.85	3.12	2.60	1.73	2.25	.0124	5.65	.0332	5.68	4.11	.143	.142	10.7	10.7	8.94	6.85
8.	3.96	3.96	2.64	2.09	1.32	1.87	.00705	7.01	.0560	7.07	5.18	.0995	.0990	11.1	11.1	9.81	7.37
10.	3.38	3.38	2.31	1.72	1.07	1.66	.00446	8.30	.0771	8.38	6.12	.0760	.0757	11.8	11.8	10.8	7.92
15.	2.50	2.50	1.77	1.24	.725	1.26	.00180	10.6	.120	10.7	7.46	.0475	.0474	13.2	13.2	12.5	8.75
20.	2.01	2.01	1.46	.945	.548	1.07		12.4	.151	12.6	8.13	.0343	.0342	14.6	14.6	14.1	9.11
30.	1.46	1.46	1.09	.607	.369	.853		14.9	.197	15.1	8.85	.0219	.0219	16.6	16.6	16.2	9.48
40.	1.16	1.16	.882	.429	.279	.731		16.5	.230	16.7	8.78	.0160	.0160	17.9	17.9	17.6	9.22
50.	.969	.969	.746	.327	.223	.642		17.8	.254	18.1	8.70	.0126	.0126	19.1	19.1	18.9	9.04
60.	.834	.834	.648	.255	.187	.579		18.8	.274	19.1	8.58	.0103	.0103	19.9	19.9	19.8	8.85
80.	.658	.658	.518	.173	.141	.485		20.2	.304	20.5	8.28	.00762	.00762	21.2	21.2	21.0	8.46
100.	.546	.546	.434	.127	.113	.419		21.3	.326	21.6	7.96	.00600	.00600	22.2	22.2	22.0	8.09

66 DYSPROSIUM
(cm²/g = 0.003706 x barns/atom)

E (MeV)	$(\frac{\mu}{\rho})^{KN}_{inc,t}$	$(\frac{\mu}{\rho})^{BD}_{inc,t}$	$(\frac{\mu}{\rho})^{KN}_{inc,a}$	$(\frac{\mu}{\rho})^{BD}_{inc,a}$	$(\frac{\mu}{\rho})^{KN}_{inc,s}$	$(\frac{\mu}{\rho})^{BD}_{inc,s}$	$(\frac{\mu}{\rho})_{coh}$	$(\frac{\mu}{\rho})_{\kappa_n}$	$(\frac{\mu}{\rho})_{\kappa_e}$	$(\frac{\mu}{\rho})_{\kappa,t}$	$(\frac{\mu}{\rho})_{\kappa,a}$	$(\frac{\mu}{\rho})_{\tau,t}$	$(\frac{\mu}{\rho})_{\tau,a}$	$(\frac{\mu}{\rho})_{tot,t}$	$(\frac{\mu}{\rho})_{tot,t-coh}$	$(\frac{\mu}{\rho})_{tot,a}$	$(\frac{\mu}{\rho})_{tot,er}$
.001	.162	.00526	.000316	.0000103	.162	.00526	10.2					4080.	4080.	4080.	4080.	4080.	4080.
M_V .001295	.162	.00734	.000408	.0000185	.162	.00734	9.93					2320.	2320.	2320.	2320.	2320.	2320.
M_{IV} .001332	.162	.00756	.000419	.0000196	.162	.00752	9.90					7260.	7260.	7260.	7260.	7260.	7260.
.0015	.162	.00871	.000471	.0000254	.161	.00867	9.75					6820.	6820.	6820.	6820.	6820.	6820.
M_{III} .001676	.162	.00993	.000526	.0000324	.161	.00990	9.56					7710.	7710.	7710.	7710.	7710.	7710.
M_{II} .001842	.162	.0110	.000578	.0000397	.161	.0110	9.41					5710.	5710.	5710.	5710.	5710.	5710.
.002	.162	.0121	.000626	.0000471	.161	.0121	9.26					4340.	4340.	4340.	4340.	4340.	4340.
M_I .002046	.162	.0124	.000641	.0000493	.161	.0124	9.23					5000.	5000.	5000.	5000.	5000.	5000.
.003	.161	.0187	.000934	.000109	.160	.0186	8.30					3780.	3780.	3780.	3780.	3780.	3780.
.004	.160	.0249	.00123	.000192	.159	.0247	7.37					4520.	4520.	4520.	4520.	4520.	4520.
.005	.160	.0306	.00153	.000293	.158	.0303	6.52					3710.	3710.	3710.	3710.	3710.	3710.
.006	.159	.0357	.00182	.000408	.157	.0353	5.78					3500.	3500.	3510.	3500.	3500.	3500.
L_{III} .007790	.158	.0437	.00233	.000645	.156	.0430	4.74					4190.	4190.	4190.	4190.	4190.	4190.
.008	.158	.0445	.00239	.000674	.155	.0437	4.63					1530.	1530.	1530.	1530.	1530.	1530.
L_{II} .008580	.158	.0471	.00255	.000763	.155	.0463	4.34					712.	712.	719.	712.	712.	712.
L_I .009046	.157	.0485	.00268	.000826	.155	.0478	4.15					393.	393.	400.	393.	393.	393.
.01	.157	.0523	.00294	.000978	.154	.0511	3.74					243.	243.	249.	243.	243.	243.
.015	.154	.0671	.00426	.00186	.150	.0652	2.41					122.	122.	126.	122.	122.	122.
.02	.151	.0778	.00545	.00281	.146	.0749	1.71					365.	304.	369.	365.	365.	304.
.03	.146	.0915	.00760	.00478	.139	.0867	.997					337.	282.	342.	337.	337.	282.
.04	.142	.0990	.00945	.00660	.132	.0923	.649					278.	236.	282.	278.	278.	236.
.05	.137	.103	.0111	.00830	.126	.0949	.456					385.	325.	389.	385.	385.	325.
K .053788	.136	.104	.0116	.00889	.124	.0949	.404					335.	285.	339.	335.	335.	285.
.06	.133	.105	.0125	.00986	.121	.0949	.340					385.	328.	389.	385.	385.	328.
.08	.126	.106	.0148	.0124	.112	.0938	.208					294.	254.	298.	294.	294.	254.
.1	.120	.105	.0166	.0145	.104	.0904	.137					97.8	88.9	100.	97.8	97.8	88.9
.15	.109	.100	.0197	.0182	.0889	.0823	.0649					45.2	42.2	47.1	45.2	45.2	42.2
.2	.0993	.0945	.0215	.0204	.0778	.0741	.0374					15.2	14.5	16.2	15.2	15.2	14.5
.3	.0863	.0841	.0233	.0227	.0630	.0615	.0171					6.82	6.60	7.56	6.93	6.82	6.60
.4	.0775	.0760	.0240	.0233	.0534	.0526	.00967					3.62	3.53	4.19	3.74	3.64	3.54
.5	.0708	.0697	.0241	.0235	.0467	.0463	.00626					2.95	2.88	3.46	3.06	2.96	2.89
.6	.0656	.0649	.0241	.0235	.0415	.0415	.00437					16.3	5.23	16.8	16.4	16.3	5.23
.8	.0574	.0571	.0235	.0228	.0340	.0343	.00248					12.1	4.74	12.5	12.2	12.1	4.74
1.	.0515	.0515	.0227	.0216	.0289	.0299	.00159					5.60	3.04	5.89	5.71	5.60	3.05
1.5	.0419	.0419	.0208	.0199	.0212	.0220	.000715	.00112		.00112	.000339	3.08	1.95	3.32	3.18	3.09	1.97
2.	.0358	.0357	.0190	.0179	.0168	.0179	.000400	.00371		.00371	.00170	1.02	.771	1.19	1.12	1.04	.789
3.	.0282	.0281	.0162	.0148	.0119	.0133	.000182	.00904	.00000982	.00904	.00552	.463	.378	.597	.556	.485	.400
4.	.0235	.0235	.0143	.0126	.00926	.0109	.000102	.0138	.0000404	.0138	.00930	.155	.136	.256	.239	.178	.158
5.	.0203	.0203	.0127	.0110	.00756	.00934	.0000663	.0178	.0000793	.0179	.0126	.0726	.0660	.158	.149	.0967	.0893
6.	.0180	.0180	.0116	.00964	.00641	.00834	.0000460	.0209	.000123	.0211	.0152	.0419	.0389	.118	.112	.0660	.0623
8.	.0147	.0147	.00978	.00775	.00489	.00693	.0000261	.0260	.000208	.0262	.0192	.0271	.0255	.0964	.0919	.0511	.0489
10.	.0125	.0125	.00856	.00637	.00397	.00615	.0000165	.0308	.000286	.0311	.0227	.0140	.0134	.0734	.0712	.0374	.0361
15.	.00926	.00926	.00656	.00460	.00269	.00467	.0000067	.0393	.000445	.0397	.0276	.00882	.00849	.0619	.0604	.0315	.0301
20.	.00745	.00745	.00541	.00350	.00203	.00397		.0460	.000560	.0467	.0301	.00422	.00411	.0478	.0471	.0261	.0243
30.	.00541	.00541	.00404	.00225	.00137	.00316		.0552	.000730	.0560	.0328	.00254	.00249	.0422	.0419	.0252	.0221
40.	.00430	.00430	.00327	.00159	.00103	.00271		.0611	.000852	.0619	.0325	.00135	.00135	.0385	.0385	.0266	.0216
50.	.00359	.00359	.00276	.00121	.000826	.00238		.0660	.000941	.0671	.0322	.000901	.000893	.0385	.0382	.0290	.0228
60.	.00309	.00309	.00240	.000945	.000693	.00215		.0697	.00102	.0708	.0318	.000671	.000667	.0389	.0389	.0313	.0242
80.	.00244	.00244	.00192	.000641	.000523	.00180		.0749	.00113	.0760	.0307	.000530	.000526	.0397	.0397	.0331	.0254
100.	.00202	.00202	.00161	.000471	.000419	.00155		.0789	.00121	.0800	.0295	.000369	.000367	.0411	.0411	.0364	.0273
												.000282	.000281	.0437	.0437	.0400	.0294
												.000176	.000176	.0489	.0489	.0463	.0324
												.000127	.000127	.0541	.0541	.0523	.0338
												.0000812	.0000812	.0615	.0615	.0600	.0351
												.0000593	.0000593	.0663	.0663	.0652	.0342
												.0000467	.0000467	.0704	.0704	.0700	.0335
												.0000382	.0000382	.0737	.0737	.0734	.0328
												.0000282	.0000282	.0784	.0784	.0778	.0314
												.0000222	.0000222	.0823	.0823	.0815	.0300

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(barns/atom)

E (MeV)	$\sigma^{KN}_{inc,t}$	$\sigma^{BD}_{inc,t}$	$\sigma^{KN}_{inc,a}$	$\sigma^{BD}_{inc,a}$	$\sigma^{KN}_{inc,s}$	$\sigma^{BD}_{inc,s}$	σ_{coh}	$\sigma_{\pi n}$	$\sigma_{\pi e}$	$\sigma_{\pi,t}$	$\sigma_{\pi,a}$	$\sigma_{\gamma,t}$	$\sigma_{\gamma,a}$	$\sigma_{tot,t}$	$\sigma_{tot,t-coh}$	$\sigma_{tot,a}$	$\sigma_{tot,en}$
.001	44.4	1.41	.0865	.00275	44.3	1.41	2830.					1150000.	1150000.	1150000.	1150000.	1150000.	1150000.
M_V .001351	44.3	2.06	.117	.00542	44.2	2.05	2750.					598000.	598000.	601000.	598000.	598000.	598000.
												1870000.	1870000.	1870000.	1870000.	1870000.	1870000.
M_{IV} .001392	44.3	2.14	.120	.00580	44.2	2.13	2740.					1750000.	1750000.	1750000.	1750000.	1750000.	1750000.
												1980000.	1980000.	1980000.	1980000.	1980000.	1980000.
.0015	44.3	2.34	.129	.00683	44.2	2.33	2710.					1620000.	1620000.	1620000.	1620000.	1620000.	1620000.
M_{III} .001743	44.3	2.78	.150	.00941	44.1	2.77	2650.					1120000.	1120000.	1120000.	1120000.	1120000.	1120000.
												1290000.	1290000.	1290000.	1290000.	1290000.	1290000.
M_{II} .001923	44.2	3.11	.165	.0116	44.1	3.10	2610.					976000.	976000.	979000.	976000.	976000.	976000.
												1160000.	1160000.	1160000.	1160000.	1160000.	1160000.
.002	44.2	3.25	.172	.0126	44.0	3.24	2580.					1050000.	1050000.	1050000.	1050000.	1050000.	1050000.
M_I .002130	44.2	3.48	.183	.0144	44.0	3.47	2550.					905000.	905000.	908000.	905000.	905000.	905000.
												1080000.	1080000.	1080000.	1080000.	1080000.	1080000.
.003	44.1	5.03	.255	.0292	43.8	5.00	2320.					438000.	438000.	440000.	438000.	438000.	438000.
.004	43.9	6.70	.338	.0516	43.5	6.65	2060.					203000.	203000.	205000.	203000.	203000.	203000.
.005	43.7	8.24	.419	.0789	43.3	8.16	1830.					113000.	113000.	115000.	113000.	113000.	113000.
.006	43.5	9.64	.498	.110	43.1	9.53	1630.					70100.	70100.	71700.	70100.	70100.	70100.
.008	43.2	12.1	.654	.183	42.6	11.9	1300.					32200.	32200.	33500.	32200.	32200.	32200.
L_{III} .008072	43.2	12.1	.660	.185	42.6	11.9	1290.					31800.	31800.	33100.	31800.	31800.	31800.
												94400.	78400.	95700.	94400.	94400.	78400.
L_{II} .008918	43.1	13.0	.724	.219	42.4	12.8	1180.					71500.	60600.	72700.	71500.	71500.	60600.
												98700.	83000.	99900.	98700.	98700.	83000.
L_I .009394	43.0	13.5	.760	.239	42.2	13.3	1120.					86300.	73300.	87400.	86300.	86300.	73300.
												99800.	84600.	101000.	99800.	99800.	84600.
.01	42.9	14.1	.804	.264	42.1	13.8	1060.					84200.	72100.	85300.	84200.	84200.	72100.
.015	42.1	18.2	1.17	.503	41.0	17.7	678.					28100.	25400.	28800.	28100.	28100.	25400.
.02	41.4	21.2	1.49	.765	39.9	20.4	479.					13000.	12100.	13500.	13000.	13000.	12100.
.03	40.0	24.9	2.08	1.30	38.0	23.6	280.					4320.	4110.	4620.	4340.	4320.	4110.
.04	38.8	27.0	2.59	1.80	36.2	25.2	182.					1960.	1890.	2170.	1990.	1960.	1890.
.05	37.6	28.1	3.04	2.27	34.6	25.8	128.					1040.	1010.	1200.	1070.	1040.	1010.
K .055618	37.0	28.5	3.26	2.51	33.7	26.0	108.					775.	755.	912.	804.	778.	758.
												4240.	1360.	4380.	4270.	4240.	1360.
.06	36.6	28.7	3.43	2.69	33.1	26.0	95.4					3450.	1280.	3570.	3480.	3450.	1280.
.08	34.7	29.0	4.06	3.40	30.6	25.6	58.3					1590.	839.	1680.	1620.	1590.	842.
.1	33.0	28.7	4.56	3.96	28.5	24.7	38.6					878.	546.	965.	907.	883.	550.
.15	29.7	27.5	5.39	4.99	24.3	22.5	18.2					291.	218.	337.	318.	296.	223.
.2	27.2	25.9	5.89	5.60	21.3	20.3	10.5					133.	108.	169.	159.	139.	114.
.3	23.7	23.0	6.38	6.20	17.3	16.8	4.80					44.2	38.6	72.0	67.2	50.6	44.8
.4	21.2	20.8	6.57	6.39	14.6	14.4	2.71					21.0	19.0	44.5	41.8	27.6	25.4
.5	19.4	19.1	6.61	6.44	12.8	12.7	1.76					12.0	11.1	32.9	31.1	18.6	17.5
.6	17.9	17.7	6.59	6.41	11.3	11.3	1.22					7.80	7.31	26.7	25.5	14.4	13.7
.8	15.7	15.6	6.44	6.22	9.31	9.38	.697					4.02	3.83	20.3	19.6	10.5	10.0
1.	14.2	14.1	6.22	5.92	7.93	8.18	.445					2.53	2.43	17.1	16.6	8.75	8.35
1.5	11.5	11.5	5.69	5.45	5.81	6.05	.201	.313		.313	.0952	1.22	1.19	13.2	13.0	7.22	6.74
2.	9.80	9.79	5.20	4.90	4.60	4.90	.113	1.03		1.03	.474	.735	.721	11.7	11.6	6.96	6.09
3.	7.71	7.70	4.45	4.04	3.26	3.66	.0509	2.51	.00270	2.51	1.53	.393	.388	10.7	10.6	7.35	5.96
4.	6.45	6.45	3.91	3.46	2.53	2.99	.0286	3.83	.0111	3.84	2.59	.261	.259	10.6	10.6	8.01	6.31
5.	5.57	5.57	3.50	3.00	2.07	2.57	.0186	4.94	.0218	4.94	3.50	.194	.193	10.7	10.7	8.65	6.69
6.	4.92	4.92	3.17	2.63	1.75	2.29	.0129	5.80	.0337	5.83	4.21	.152	.151	10.9	10.9	9.15	6.99
8.	4.02	4.02	2.68	2.11	1.34	1.91	.00734	7.23	.0570	7.29	5.33	.106	.105	11.4	11.4	10.1	7.54
10.	3.43	3.43	2.34	1.76	1.08	1.64	.00465	8.51	.0782	8.59	6.27	.0810	.0807	12.1	12.1	11.0	8.09
15.	2.54	2.54	1.80	1.26	.736	1.28	.00187	10.9	.122	11.0	7.66	.0505	.0504	13.6	13.6	12.9	8.97
20.	2.04	2.04	1.48	.957	.557	1.08		12.8	.153	13.0	8.38	.0364	.0363	15.1	15.1	14.5	9.37
30.	1.48	1.48	1.11	.613	.375	.867		15.3	.200	15.5	9.04	.0234	.0234	17.0	17.0	16.6	9.68
40.	1.18	1.18	.895	.435	.283	.745		17.0	.233	17.2	9.01	.0171	.0171	18.4	18.4	18.1	9.46
50.	.984	.984	.757	.331	.226	.653		18.3	.258	18.6	8.91	.0135	.0135	19.6	19.6	19.4	9.25
60.	.847	.847	.657	.258	.190	.589		19.3	.278	19.6	8.73	.0111	.0111	20.5	20.5	20.3	9.00
80.	.668	.668	.525	.175	.143	.493		20.8	.308	21.1	8.49	.00815	.00815	21.8	21.8	21.6	8.67
100.	.555	.555	.440	.129	.114	.426		21.9	.330	22.2	8.14	.00639	.00639	22.8	22.8	22.6	8.28

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(cm²/g = 0.003652 × barns/atom)

E (MeV)	$(\frac{\mu}{\rho})^{KN}_{inc,t}$	$(\frac{\mu}{\rho})^{BD}_{inc,t}$	$(\frac{\mu}{\rho})^{KN}_{inc,a}$	$(\frac{\mu}{\rho})^{BD}_{inc,a}$	$(\frac{\mu}{\rho})^{KN}_{inc,s}$	$(\frac{\mu}{\rho})^{BD}_{inc,s}$	$(\frac{\mu}{\rho})_{coh}$	$(\frac{\mu}{\rho})_{\kappa n}$	$(\frac{\mu}{\rho})_{\kappa e}$	$(\frac{\mu}{\rho})_{\kappa,t}$	$(\frac{\mu}{\rho})_{\kappa,a}$	$(\frac{\mu}{\rho})_{\tau,t}$	$(\frac{\mu}{\rho})_{\tau,a}$	$(\frac{\mu}{\rho})_{tot,t}$	$(\frac{\mu}{\rho})_{tot,t-coh}$	$(\frac{\mu}{\rho})_{tot,a}$	$(\frac{\mu}{\rho})_{tot,en}$
.001	.162	.00515	.000316	.0000100	.162	.00515	10.3					4200.	4200.	4200.	4200.	4200.	4200.
M_V .001351	.162	.00752	.000427	.0000198	.161	.00749	10.0					2180.	2180.	2190.	2180.	2180.	2180.
												6830.	6830.	6830.	6830.	6830.	6830.
M_{IV} .001392	.162	.00782	.000438	.0000212	.161	.00778	10.0					6390.	6390.	6390.	6390.	6390.	6390.
												7230.	7230.	7230.	7230.	7230.	7230.
.0015	.162	.00855	.000471	.0000249	.161	.00851	9.90					5920.	5920.	5920.	5920.	5920.	5920.
M_{III} .001743	.162	.0102	.000548	.0000344	.161	.0101	9.68					4090.	4090.	4090.	4090.	4090.	4090.
												4710.	4710.	4710.	4710.	4710.	4710.
M_{II} .001923	.161	.0114	.000603	.0000424	.161	.0113	9.53					3560.	3560.	3580.	3560.	3560.	3560.
												4240.	4240.	4240.	4240.	4240.	4240.
.002	.161	.0119	.000628	.0000460	.161	.0118	9.42					3830.	3830.	3830.	3830.	3830.	3830.
M_I .002130	.161	.0127	.000668	.0000526	.161	.0127	9.31					3310.	3310.	3320.	3310.	3310.	3310.
												3940.	3940.	3940.	3940.	3940.	3940.
.003	.161	.0184	.000931	.000107	.160	.0183	8.47					1600.	1600.	1610.	1600.	1600.	1600.
.004	.160	.0245	.00123	.000188	.159	.0243	7.52					741.	741.	749.	741.	741.	741.
.005	.160	.0301	.00153	.000288	.158	.0298	6.68					413.	413.	420.	413.	413.	413.
.006	.159	.0352	.00182	.000402	.157	.0348	5.95					256.	256.	262.	256.	256.	256.
.008	.158	.0442	.00239	.000668	.156	.0435	4.75					118.	118.	122.	118.	118.	118.
L_{III} .008072	.158	.0442	.00241	.000676	.156	.0435	4.71					116.	116.	121.	116.	116.	116.
												345.	286.	349.	345.	345.	286.
L_{II} .008918	.157	.0475	.00264	.000800	.155	.0467	4.31					261.	221.	266.	261.	261.	221.
												360.	303.	365.	360.	360.	303.
L_I .009394	.157	.0493	.00278	.000873	.154	.0486	4.09					315.	268.	319.	315.	315.	268.
												364.	309.	369.	364.	364.	309.
.01	.157	.0515	.00294	.000964	.154	.0504	3.87					307.	263.	312.	307.	307.	263.
.015	.154	.0665	.00427	.00184	.150	.0646	2.48					103.	92.8	105.	103.	103.	92.8
.02	.151	.0774	.00544	.00279	.146	.0745	1.75					47.5	44.2	49.3	47.5	47.5	44.2
.03	.146	.0909	.00760	.00475	.139	.0862	1.02					15.8	15.0	16.9	15.8	15.8	15.0
.04	.142	.0986	.00946	.00657	.132	.0920	.665					7.16	6.90	7.92	7.27	7.16	6.90
.05	.137	.103	.0111	.00829	.126	.0942	.467					3.80	3.69	4.38	3.91	3.80	3.69
K .055618	.135	.104	.0119	.00917	.123	.0950	.394					2.83	2.76	3.33	2.94	2.84	2.77
												15.5	4.97	16.0	15.6	15.5	4.97
.06	.134	.105	.0125	.00982	.121	.0950	.348					12.6	4.67	13.0	12.7	12.6	4.67
.08	.127	.106	.0148	.0124	.112	.0935	.213					5.81	3.06	6.14	5.92	5.81	3.07
.1	.121	.105	.0167	.0145	.104	.0902	.141					3.21	1.99	3.45	3.31	3.22	2.01
.15	.108	.100	.0197	.0182	.0887	.0822	.0665					1.06	.796	1.23	1.16	1.08	.814
.2	.0993	.0946	.0215	.0205	.0778	.0741	.0383					.486	.394	.617	.581	.508	.416
.3	.0866	.0840	.0233	.0226	.0632	.0614	.0175					.161	.141	.263	.245	.185	.164
.4	.0774	.0760	.0240	.0233	.0533	.0526	.00990					.0767	.0694	.163	.153	.101	.0928
.5	.0708	.0698	.0241	.0235	.0467	.0464	.00643					.0438	.0405	.120	.114	.0679	.0639
.6	.0654	.0646	.0241	.0234	.0413	.0413	.00446					.0285	.0267	.0975	.0931	.0526	.0500
.8	.0573	.0570	.0235	.0227	.0340	.0343	.00255					.0147	.0140	.0741	.0716	.0383	.0365
1.	.0519	.0515	.0227	.0216	.0290	.0299	.00163					.00924	.00887	.0624	.0606	.0320	.0305
1.5	.0420	.0420	.0208	.0199	.0212	.0221	.000734	.00114		.00114	.000348	.00446	.00435	.0482	.0475	.0264	.0246
2.	.0358	.0358	.0190	.0179	.0168	.0179	.000413	.00376		.00376	.00173	.00268	.00269	.0427	.0424	.0254	.0222
3.	.0282	.0281	.0163	.0148	.0119	.0134	.000186	.00917	.00000986	.00917	.00559	.00144	.00142	.0391	.0387	.0268	.0218
4.	.0236	.0236	.0143	.0126	.00924	.0109	.000104	.0140	.0000405	.0140	.00946	.000953	.000946	.0387	.0387	.0293	.0230
5.	.0203	.0203	.0128	.0110	.00756	.00939	.0000679	.0180	.0000796	.0181	.0128	.000708	.000705	.0391	.0391	.0316	.0244
6.	.0180	.0180	.0116	.00960	.00639	.00836	.0000471	.0212	.0001123	.0213	.0154	.000555	.000551	.0398	.0398	.0334	.0255
8.	.0147	.0147	.00979	.00771	.00489	.00698	.0000268	.0264	.0002208	.0266	.0195	.000387	.000383	.0416	.0416	.0369	.0275
10.	.0125	.0125	.00855	.00635	.00394	.00617	.0000170	.0311	.0002286	.0314	.0229	.000296	.000295	.0442	.0442	.0402	.0295
15.	.00928	.00928	.00657	.00460	.00269	.00467	.0000068	.0398	.0004446	.0402	.0280	.000184	.000184	.0497	.0497	.0471	.0328
20.	.00745	.00745	.00540	.00349	.00203	.00394		.0467	.0005559	.0475	.0306	.000133	.000133	.0551	.0551	.0530	.0342
30.	.00540	.00540	.00405	.00224	.00137	.00317		.0559	.0006730	.0566	.0330	.0000855	.0000855	.0621	.0621	.0606	.0354
40.	.00431	.00431	.00327	.00159	.00103	.00272		.0621	.0007851	.0628	.0329	.0000624	.0000624	.0672	.0672	.0661	.0345
50.	.00359	.00359	.00276	.00121	.000825	.00238		.0668	.0008942	.0679	.0325	.0000493	.0000493	.0716	.0716	.0708	.0338
60.	.00309	.00309	.00240	.000942	.000694	.00215		.0705	.00102	.0716	.0319	.0000405	.0000405	.0749	.0749	.0741	.0329
80.	.00244	.00244	.00192	.000639	.000522	.00180		.0760	.00112	.0771	.0310	.0000298	.0000298	.0796	.0796	.0789	.0317
100.	.00203	.00203	.00161	.000471	.000416	.00156		.0800	.00121	.0811	.0297	.0000233	.0000233	.0833	.0833	.0825	.0302

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(barns/atom)

E (MeV)	$\sigma^{KN}_{inc,t}$	$\sigma^{BD}_{inc,t}$	$\sigma^{KN}_{inc,a}$	$\sigma^{BD}_{inc,a}$	$\sigma^{KN}_{inc,s}$	$\sigma^{BD}_{inc,s}$	σ_{coh}	$\sigma_{\gamma n}$	$\sigma_{\gamma e}$	$\sigma_{\gamma,t}$	$\sigma_{\gamma,a}$	$\sigma_{\gamma,t}$	$\sigma_{\gamma,a}$	$\sigma_{tot,t}$	$\sigma_{tot,t-coh}$	$\sigma_{tot,a}$	$\sigma_{tot,en}$
.001	45.1	1.39	.0878	.00271	45.0	1.39	2920.					1200000.	1200000.	1200000.	1200000.	1200000.	1200000.
M_V .001409	45.0	2.15	.123	.00589	44.9	2.14	2830.					571000.	571000.	574000.	571000.	571000.	571000.
M_{IV} .001453	45.0	2.23	.127	.0063	44.8	2.22	2820.					1790000.	1790000.	1790000.	1790000.	1790000.	1790000.
.0015	45.0	2.32	.131	.00677	44.8	2.31	2800.					1670000.	1670000.	1670000.	1670000.	1670000.	1670000.
M_{III} .001812	44.9	2.88	.158	.0101	44.8	2.87	2720.					1890000.	1890000.	1890000.	1890000.	1890000.	1890000.
.002	44.9	3.22	.174	.0125	44.7	3.21	2670.					1730000.	1730000.	1730000.	1730000.	1730000.	1730000.
M_{II} .002006	44.9	3.24	.175	.0126	44.7	3.23	2670.					1080000.	1080000.	1080000.	1080000.	1080000.	1080000.
M_I .002217	44.8	3.62	.193	.0156	44.7	3.60	2610.					1240000.	1240000.	1240000.	1240000.	1240000.	1240000.
.003	44.7	5.00	.259	.0290	44.5	4.97	2400.					935000.	935000.	938000.	935000.	935000.	935000.
.004	44.5	6.68	.343	.0514	44.2	6.63	2140.					931000.	931000.	934000.	931000.	931000.	931000.
.005	44.4	8.23	.425	.0788	43.9	8.15	1900.					1110000.	1110000.	1110000.	1110000.	1110000.	1110000.
.006	44.2	9.64	.506	.110	43.7	9.53	1690.					867000.	867000.	870000.	867000.	867000.	867000.
.008	43.9	12.1	.664	.183	43.2	11.9	1350.					1030000.	1030000.	1030000.	1030000.	1030000.	1030000.
L_{III} .008358	43.8	12.5	.692	.197	43.1	12.3	1300.					468000.	468000.	470000.	468000.	468000.	468000.
L_{II} .009264	43.7	13.4	.761	.234	42.9	13.2	1190.					218000.	218000.	220000.	218000.	218000.	218000.
L_I .009752	43.6	13.9	.798	.255	42.8	13.6	1130.					120000.	120000.	122000.	120000.	120000.	120000.
.01	43.5	14.2	.816	.266	42.7	13.9	1100.					75000.	75000.	74700.	75000.	75000.	75000.
.015	42.8	18.3	1.18	.506	41.6	17.8	706.					34400.	34400.	35800.	34400.	34400.	34400.
.02	42.0	21.3	1.52	.769	40.5	20.5	498.					30800.	30800.	32100.	30800.	30800.	30800.
.03	40.6	25.2	2.11	1.31	38.5	23.9	291.					90700.	75000.	92000.	90700.	90700.	75000.
.04	39.3	27.3	2.62	1.82	36.7	25.5	189.					68200.	57600.	69400.	68200.	68200.	57600.
.05	38.2	28.4	3.08	2.29	35.1	26.1	133.					94300.	79000.	95500.	94300.	94300.	79000.
K .057486	37.4	28.9	3.38	2.61	34.0	26.3	106.					82500.	69800.	83600.	82500.	82500.	69800.
.06	37.1	29.0	3.48	2.72	33.6	26.3	99.2					95400.	80500.	96500.	95400.	95400.	80500.
.08	35.2	29.3	4.12	3.43	31.1	25.9	60.6					88700.	75200.	89800.	88700.	88700.	75200.
.1	33.5	29.1	4.62	4.02	28.9	25.1	40.1					29600.	26600.	30300.	29600.	29600.	26600.
.15	30.2	27.9	5.47	5.06	24.7	22.8	18.9					13800.	12800.	14300.	13800.	13800.	12800.
.2	27.6	26.2	5.98	5.66	21.7	20.5	11.0					4590.	4360.	4910.	4620.	4590.	4360.
.3	24.0	23.3	6.48	6.28	17.6	17.0	4.99					2100.	2020.	2320.	2130.	2100.	2020.
.4	21.5	21.1	6.67	6.46	14.9	14.6	2.82					1120.	1090.	1280.	1150.	1120.	1090.
.5	19.7	19.4	6.71	6.54	13.0	12.9	1.83					753.	733.	888.	782.	756.	736.
.6	18.2	18.0	6.68	6.52	11.5	11.5	1.27					4080.	1300.	4210.	4110.	4080.	1300.
.8	16.0	15.9	6.53	6.34	9.45	9.56	.724					3620.	1260.	3750.	3650.	3620.	1260.
1.	14.4	14.3	6.32	6.01	8.04	8.29	.463					1680.	858.	1770.	1710.	1680.	861.
1.5	11.7	11.6	5.77	5.50	5.90	6.10	.209	.326		.326	.0991	924.	563.	993.	953.	929.	567.
2.	9.95	9.93	5.28	4.97	4.67	4.97	.117	1.07		1.07	.491	308.	228.	355.	336.	313.	239.
3.	7.83	7.82	4.51	4.10	3.31	3.72	.0530	2.60	.00274	2.60	1.58	141.	113.	178.	167.	147.	119.
4.	6.54	6.54	3.97	3.50	2.57	3.04	.0298	3.97	.0112	3.98	2.68	47.0	40.9	75.3	70.3	53.5	47.2
5.	5.65	5.65	3.55	3.03	2.10	2.62	.0194	5.09	.0220	5.11	3.60	22.3	20.1	46.2	43.4	29.0	26.6
6.	4.99	4.99	3.22	2.65	1.78	2.34	.0135	5.99	.0342	6.02	4.34	12.8	11.8	34.0	32.2	19.5	18.3
8.	4.08	4.08	2.72	2.14	1.36	1.94	.00764	7.41	.0578	7.47	5.46	8.32	7.78	27.6	26.3	15.0	14.3
10.	3.48	3.48	2.38	1.76	1.10	1.72	.00485	8.76	.0797	8.84	6.44	4.30	4.09	20.9	20.2	10.8	10.4
15.	2.57	2.57	1.83	1.27	.747	1.30	.00194	11.2	.123	11.3	7.86	2.70	2.59	17.5	17.0	9.02	8.60
20.	2.07	2.07	1.50	.969	.565	1.10	.00102	13.2	.155	13.4	8.61	1.30	1.27	13.4	13.2	7.40	6.87
30.	1.50	1.50	1.12	.618	.380	.882		15.7	.202	15.9	9.24	.785	.770	11.9	11.8	7.13	6.23
40.	1.20	1.20	.908	.442	.287	.758		17.5	.236	17.7	9.22	.421	.416	10.9	10.8	7.53	6.10
50.	.998	.998	.768	.334	.230	.664		18.8	.262	19.1	9.09	.279	.276	10.8	10.8	8.23	6.46
60.	.860	.860	.667	.261	.192	.599		19.8	.282	20.1	8.92	.207	.205	11.0	11.0	8.87	6.83
80.	.678	.678	.533	.177	.145	.501		21.4	.312	21.7	8.66	.163	.162	11.2	11.2	9.40	7.15
100.	.563	.563	.447	.130	.116	.433		22.5	.335	22.8	8.31	.113	.112	11.7	11.7	10.3	7.71
												.0868	.0865	12.4	12.4	11.3	8.29
												.0540	.0539	13.9	13.9	13.2	9.18
												.0390	.03A9	15.5	15.5	14.9	9.67
												.0250	.0250	17.4	17.4	17.0	9.88
												.0182	.0182	18.9	18.9	18.6	9.68
												.0144	.0144	20.1	20.1	19.9	9.44
												.0118	.0118	21.0	21.0	20.8	9.19
												.00866	.00866	22.4	22.4	22.2	8.85
												.00680	.00680	23.4	23.4	23.3	8.45

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(cm²/g = 0.003601 x barns/atom)

E (MeV)	$(\frac{\mu}{\rho})^{KN}_{inc,t}$	$(\frac{\mu}{\rho})^{BD}_{inc,t}$	$(\frac{\mu}{\rho})^{KN}_{inc,a}$	$(\frac{\mu}{\rho})^{BD}_{inc,a}$	$(\frac{\mu}{\rho})^{KN}_{inc,s}$	$(\frac{\mu}{\rho})^{BD}_{inc,s}$	$(\frac{\mu}{\rho})_{coh}$	$(\frac{\mu}{\rho})_{\kappa_n}$	$(\frac{\mu}{\rho})_{\kappa_e}$	$(\frac{\mu}{\rho})_{\kappa,t}$	$(\frac{\mu}{\rho})_{\kappa,a}$	$(\frac{\mu}{\rho})_{\tau,t}$	$(\frac{\mu}{\rho})_{\tau,a}$	$(\frac{\mu}{\rho})_{tot,t}$	$(\frac{\mu}{\rho})_{tot,t-coh}$	$(\frac{\mu}{\rho})_{tot,a}$	$(\frac{\mu}{\rho})_{tot,en}$
.001	.162	.00501	.000316	.00000980	.162	.00501	10.5					4320.	4320.	4320.	4320.	4320.	4320.
M_V .001409	.162	.00774	.000443	.0000212	.162	.00771	10.2					2060.	2060.	2070.	2060.	2060.	2060.
M_{IV} .001453	.162	.00803	.000457	.0000227	.161	.00799	10.2					6450.	6450.	6450.	6450.	6450.	6450.
.0015	.162	.00835	.000472	.0000244	.161	.00832	10.1					6010.	6010.	6010.	6010.	6010.	6010.
M_{III} .001812	.162	.0104	.000569	.0000364	.161	.0103	9.79					6810.	6810.	6810.	6810.	6810.	6810.
.002	.162	.0116	.000627	.0000450	.161	.0116	9.61					6230.	6230.	6230.	6230.	6230.	6230.
M_{II} .002006	.162	.0117	.000630	.0000454	.161	.0116	9.61					3890.	3890.	3890.	3890.	3890.	3890.
M_I .002217	.161	.0130	.000695	.0000562	.161	.0130	9.40					4470.	4470.	4470.	4470.	4470.	4470.
.003	.161	.0180	.000933	.000104	.160	.0179	8.64					3370.	3370.	3380.	3370.	3370.	3370.
.004	.160	.0241	.00124	.000185	.159	.0239	7.71					3350.	3350.	3340.	3350.	3350.	3350.
.005	.160	.0296	.00153	.000284	.158	.0293	6.84					4000.	4000.	4000.	4000.	4000.	4000.
.006	.159	.0347	.00182	.000396	.157	.0343	6.09					3120.	3120.	3130.	3120.	3120.	3120.
.008	.158	.0436	.00239	.000659	.156	.0429	4.86					3710.	3710.	3710.	3710.	3710.	3710.
L_{III} .008358	.158	.0450	.00249	.000709	.155	.0443	4.68					1690.	1690.	1690.	1690.	1690.	1690.
L_{II} .009264	.157	.0483	.00274	.000843	.154	.0475	4.29					785.	785.	792.	785.	785.	785.
L_I .009752	.157	.0501	.00287	.000918	.154	.0490	4.07					432.	432.	439.	432.	432.	432.
.01	.157	.0511	.00294	.000958	.154	.0501	3.96					276.	276.	276.	276.	276.	276.
.015	.154	.0659	.00425	.00182	.150	.0641	2.54					124.	124.	129.	124.	124.	124.
.02	.151	.0767	.00547	.00277	.146	.0738	1.79					111.	111.	116.	111.	111.	111.
.03	.146	.0907	.00760	.00472	.139	.0861	1.05					327.	270.	331.	327.	327.	270.
.04	.142	.0983	.00943	.00655	.132	.0918	.681					244.	207.	250.	246.	246.	207.
.05	.138	.102	.0111	.00825	.126	.0940	.479					340.	284.	344.	340.	340.	284.
K .057486	.135	.104	.0122	.00940	.122	.0947	.382					297.	251.	301.	297.	297.	251.
.06	.134	.104	.0125	.00979	.121	.0947	.357					344.	290.	347.	344.	344.	290.
.08	.127	.106	.0148	.0124	.112	.0933	.218					319.	271.	323.	319.	319.	271.
.1	.121	.105	.0166	.0145	.104	.0904	.144					107.	95.8	109.	107.	107.	95.8
.15	.109	.100	.0197	.0182	.0889	.0821	.0681					49.7	46.1	51.5	49.7	49.7	46.1
.2	.0994	.0943	.0215	.0204	.0781	.0738	.0396					16.5	15.7	17.7	16.6	16.5	15.7
.3	.0864	.0839	.0233	.0226	.0634	.0612	.0180					7.56	7.27	8.35	7.67	7.56	7.27
.4	.0774	.0760	.0240	.0233	.0537	.0526	.0102					4.03	3.93	4.61	4.14	4.03	3.93
.5	.0709	.0699	.0242	.0236	.0468	.0465	.00659					2.71	2.64	3.20	2.82	2.72	2.65
.6	.0655	.0648	.0241	.0235	.0414	.0414	.00457					14.7	4.68	15.2	14.8	14.7	4.68
.8	.0576	.0573	.0235	.0228	.0340	.0344	.00261					13.0	4.54	13.5	13.1	13.0	4.54
1.	.0519	.0515	.0228	.0216	.0290	.0299	.00167					6.05	3.09	6.37	6.16	6.05	3.10
1.5	.0421	.0418	.0208	.0198	.0212	.0220	.000753	.00117		.00117	.000357	3.33	2.03	3.58	3.43	3.35	2.04
2.	.0358	.0358	.0190	.0179	.0168	.0179	.000421	.00385		.00385	.00177	1.11	.821	1.28	1.21	1.13	.839
3.	.0282	.0282	.0162	.0148	.0119	.0134	.000191	.00936	.00000987	.00936	.00569	.508	.407	.641	.601	.529	.429
4.	.0236	.0236	.0143	.0126	.00925	.0109	.000107	.0143	.0000403	.0143	.00965	.169	.147	.271	.253	.193	.170
5.	.0203	.0203	.0128	.0109	.00756	.00943	.0000699	.0183	.0000792	.0184	.0130	.0883	.0724	.166	.156	.104	.0958
6.	.0180	.0180	.0116	.00954	.00641	.00843	.0000486	.0216	.000123	.0217	.0156	.0461	.0425	.122	.116	.0702	.0659
8.	.0147	.0147	.00979	.00771	.00490	.00699	.0000275	.0267	.000208	.0269	.0197	.0300	.0280	.0994	.0947	.0540	.0515
10.	.0125	.0125	.00857	.00634	.00396	.00619	.0000175	.0315	.000287	.0318	.0232	.0155	.0147	.0753	.0727	.0389	.0375
15.	.00925	.00925	.00659	.00457	.00269	.00468	.0000070	.0403	.000443	.0407	.0283	.00972	.00933	.0630	.0612	.0325	.0310
20.	.00745	.00745	.00540	.00349	.00203	.00396	.0000037	.0475	.000558	.0483	.0310	.00468	.00457	.0483	.0475	.0266	.0247
30.	.00540	.00540	.00403	.00223	.00137	.00318		.0565	.000727	.0573	.0333	.00283	.00277	.0429	.0425	.0257	.0224
40.	.00432	.00432	.00327	.00159	.00103	.00273		.0630	.000850	.0637	.0332	.00152	.00150	.0393	.0389	.0271	.0220
50.	.00359	.00359	.00277	.00120	.000828	.00239		.0677	.000943	.0688	.0327	.00100	.000994	.0389	.0389	.0296	.0233
60.	.00310	.00310	.00240	.00094	.000691	.00216		.0713	.00102	.0724	.0321	.000745	.000718	.0394	.0396	.0319	.0246
80.	.00244	.00244	.00192	.000837	.000522	.00180		.0771	.00112	.0781	.0312	.000587	.000583	.0403	.0403	.0338	.0257
100.	.00203	.00203	.00161	.000468	.000418	.00156		.0810	.00121	.0821	.0299	.000407	.000403	.0421	.0421	.0371	.0278
												.000313	.000311	.0447	.0447	.0407	.0299
												.000194	.000194	.0501	.0501	.0475	.0331
												.000140	.000140	.0558	.0558	.0537	.0346
												.0000900	.0000900	.0627	.0627	.0612	.0356
												.0000655	.0000655	.0681	.0681	.0670	.0349
												.0000519	.0000519	.0724	.0724	.0717	.0340
												.0000425	.0000425	.0756	.0756	.0749	.0331
												.0000312	.0000312	.0807	.0807	.0799	.0319
												.0000245	.0000245	.0843	.0843	.0839	.0304

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(barns/atom)

E (MeV)	$\sigma^{KN}_{inc,t}$	$\sigma^{BD}_{inc,t}$	$\sigma^{KN}_{inc,a}$	$\sigma^{BD}_{inc,a}$	$\sigma^{KN}_{inc,s}$	$\sigma^{BD}_{inc,s}$	σ_{coh}	σ_{xn}	σ_{xe}	$\sigma_{x,t}$	$\sigma_{x,a}$	$\sigma_{\gamma,t}$	$\sigma_{\gamma,a}$	$\sigma_{tot,t}$	$\sigma_{tot,t-coh}$	$\sigma_{tot,a}$	$\sigma_{tot,en}$
.001	45.7	1.38	.0891	.00269	45.6	1.38	3010.					1250000.	1250000.	1250000.	1250000.	1250000.	1250000.
M_V .001468	45.6	2.24	.130	.00640	45.5	2.23	2900.					546000.	546000.	549000.	546000.	546000.	546000.
.0015	45.6	2.30	.133	.00671	45.5	2.29	2890.					1710000.	1710000.	1710000.	1710000.	1710000.	1710000.
M_{IV} .001515	45.6	2.32	.134	.00683	45.5	2.31	2890.					1620000.	1620000.	1620000.	1620000.	1620000.	1620000.
M_{III} .001881	45.6	2.99	.166	.0109	45.4	2.98	2790.					1590000.	1590000.	1590000.	1590000.	1590000.	1590000.
.002	45.5	3.20	.177	.0124	45.4	3.19	2760.					1800000.	1800000.	1800000.	1800000.	1800000.	1800000.
M_{II} .002090	45.5	3.36	.185	.0136	45.3	3.35	2740.					1040000.	1040000.	1040000.	1040000.	1040000.	1040000.
M_I .002306	45.5	3.75	.203	.0168	45.3	3.73	2680.					1190000.	1190000.	1190000.	1190000.	1190000.	1190000.
.003	45.4	4.98	.263	.0289	45.1	4.95	2490.					1010000.	1010000.	1010000.	1010000.	1010000.	1010000.
.004	45.2	6.66	.348	.0512	44.8	6.61	2220.					890000.	890000.	893000.	890000.	890000.	890000.
.005	45.0	8.22	.431	.0787	44.6	8.14	1980.					1060000.	1060000.	1060000.	1040000.	1040000.	1060000.
.006	44.8	9.64	.513	.110	44.3	9.53	1760.					831000.	831000.	834000.	831000.	831000.	831000.
.008	44.5	12.1	.674	.183	43.8	11.9	1410.					987000.	987000.	990000.	987000.	987000.	987000.
L_{III} .008648	44.4	12.8	.725	.209	43.7	12.6	1320.					496000.	496000.	498000.	496000.	496000.	496000.
L_{II} .009617	44.2	13.8	.800	.249	43.4	13.6	1190.					231000.	231000.	233000.	231000.	231000.	231000.
.01	44.2	14.2	.828	.266	43.4	13.9	1150.					128000.	128000.	130000.	128000.	128000.	128000.
L_I .010116	44.2	14.3	.838	.271	43.3	14.0	1140.					79400.	79400.	81200.	79400.	79400.	79400.
.015	43.4	18.3	1.20	.506	42.2	17.8	736.					36600.	36600.	38000.	36600.	36600.	36600.
.02	42.6	21.5	1.54	.776	41.1	20.7	518.					29900.	29900.	31200.	29900.	29900.	29900.
.03	41.2	25.4	2.15	1.32	39.1	24.1	303.					87300.	71900.	88600.	87300.	87300.	71900.
.04	39.9	27.5	2.66	1.83	37.3	25.7	197.					65200.	54900.	66400.	65200.	65200.	54900.
.05	38.7	28.7	3.13	2.32	35.6	26.4	138.					90100.	75300.	91300.	90100.	90100.	75300.
K .059390	37.7	29.3	3.50	2.72	34.2	26.6	105.					81300.	68400.	82500.	81300.	81300.	68400.
.06	37.6	29.4	3.53	2.76	34.1	26.6	103.					79000.	66600.	80200.	79000.	79000.	66600.
.08	35.7	29.7	4.18	3.48	31.5	26.2	63.0					91300.	76800.	92500.	91300.	91300.	76800.
.1	34.0	29.5	4.69	4.07	29.3	25.4	41.7					31300.	28000.	32100.	31300.	31300.	28000.
.15	30.6	28.3	5.55	5.14	25.1	23.2	19.7					14600.	13400.	15100.	14600.	14600.	13400.
.2	28.0	26.6	6.06	5.75	22.0	20.8	11.4					4870.	4610.	5200.	4900.	4870.	4610.
.3	24.4	23.7	6.57	6.39	17.8	17.3	5.18					2220.	2130.	2440.	2250.	2220.	2130.
.4	21.8	21.4	6.77	6.55	15.1	14.9	2.93					1190.	1150.	1360.	1220.	1190.	1150.
.5	19.9	19.7	6.80	6.64	13.1	13.1	1.90					732.	712.	866.	761.	736.	715.
.6	18.5	18.3	6.78	6.62	11.7	11.7	1.32					3940.	1250.	4070.	3970.	3940.	1250.
.8	16.2	16.1	6.63	6.42	9.58	9.68	.750					3820.	1240.	3950.	3850.	3820.	1240.
1.	14.6	14.5	6.41	6.08	8.16	8.42	.481					1770.	874.	1860.	1800.	1770.	877.
1.5	11.8	11.8	5.86	5.58	5.98	6.22	.217	.340		.340	.103	975.	580.	1050.	1000.	980.	584.
2.	10.1	10.1	5.36	5.05	4.74	5.05	.122	1.11		1.11	.509	327.	239.	375.	355.	333.	244.
3.	7.94	7.93	4.58	4.15	3.36	3.78	.0548	2.68	.00278	2.68	1.63	150.	120.	188.	177.	156.	126.
4.	6.64	6.64	4.03	3.55	2.61	3.09	.0310	4.08	.0114	4.09	2.75	50.0	43.3	78.9	73.7	56.6	49.7
5.	5.73	5.73	3.60	3.07	2.13	2.66	.0202	5.23	.0223	5.25	3.70	23.8	21.4	48.1	45.2	30.6	27.9
6.	5.07	5.07	3.26	2.69	1.80	2.38	.0140	6.15	.0347	6.18	4.45	13.7	12.6	35.3	33.4	20.5	19.2
8.	4.14	4.14	2.76	2.16	1.38	1.98	.00795	7.62	.0586	7.68	5.60	8.86	8.26	28.5	27.2	15.6	14.9
10.	3.53	3.53	2.41	1.78	1.12	1.75	.00506	9.00	.0807	9.08	6.58	4.60	4.37	21.4	20.7	11.2	10.8
15.	2.61	2.61	1.85	1.29	.758	1.32	.00202	11.5	.125	11.6	8.01	2.90	2.78	17.9	17.4	9.31	8.86
20.	2.10	2.10	1.52	.979	.573	1.12	.00105	13.5	.158	13.7	8.77	1.39	1.35	13.7	13.5	7.59	7.03
30.	1.53	1.53	1.14	.627	.386	.903		16.1	.205	16.3	9.44	.840	.823	12.2	12.0	7.31	6.38
40.	1.21	1.21	.922	.444	.291	.766		18.0	.240	18.2	9.43	.449	.443	11.1	11.1	7.71	6.22
50.	1.01	1.01	.780	.337	.233	.673		19.3	.266	19.6	9.27	.298	.295	11.1	11.0	8.42	6.59
60.	.872	.872	.677	.264	.195	.608		20.4	.286	20.7	9.14	.220	.218	11.2	11.2	9.07	6.99
80.	.688	.688	.541	.179	.147	.509		22.0	.316	22.3	8.86	.174	.173	11.4	11.4	9.61	7.31
100.	.571	.571	.454	.131	.118	.440		23.1	.340	23.4	8.46	.121	.120	11.9	11.9	10.6	7.88
												.0928	.0924	12.7	12.7	11.6	8.45
												.0575	.0573	14.3	14.3	13.5	9.36
												.0414	.0413	15.8	15.8	15.3	9.79
												.0264	.0264	17.9	17.9	17.5	10.1
												.0194	.0194	19.4	19.4	19.1	9.89
												.0153	.0153	20.6	20.6	20.4	9.62
												.0125	.0125	21.6	21.6	21.4	9.42
												.00920	.00920	23.0	23.0	22.9	9.05
												.00726	.00726	24.0	24.0	23.9	8.60

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(cm^2/g = 0.003565 x barns/atom)

E (MeV)	$(\frac{\mu}{\rho})^{KN}_{inc,t}$	$(\frac{\mu}{\rho})^{BD}_{inc,t}$	$(\frac{\mu}{\rho})^{KN}_{inc,a}$	$(\frac{\mu}{\rho})^{BD}_{inc,a}$	$(\frac{\mu}{\rho})^{KN}_{inc,s}$	$(\frac{\mu}{\rho})^{BD}_{inc,s}$	$(\frac{\mu}{\rho})_{coh}$	$(\frac{\mu}{\rho})_{\kappa_n}$	$(\frac{\mu}{\rho})_{\kappa_e}$	$(\frac{\mu}{\rho})_{\kappa,t}$	$(\frac{\mu}{\rho})_{\kappa,a}$	$(\frac{\mu}{\rho})_{\gamma,t}$	$(\frac{\mu}{\rho})_{\gamma,a}$	$(\frac{\mu}{\rho})_{tot,t}$	$(\frac{\mu}{\rho})_{tot,t-coh}$	$(\frac{\mu}{\rho})_{tot,a}$	$(\frac{\mu}{\rho})_{tot,er.}$
.001	.163	.00492	.000318	.0000096	.163	.00492	10.7					4460.	4460.	4460.	4460.	4460.	4460.
M_V .001468	.163	.00799	.000463	.0000228	.162	.00795	10.3					1950.	1950.	1940.	1950.	1950.	1950.
												6100.	6100.	6100.	6100.	6100.	6100.
.0015	.163	.00820	.000474	.0000239	.162	.00816	10.3					5780.	5780.	5780.	5780.	5780.	5780.
M_{IV} .001515	.163	.00827	.000478	.0000243	.162	.00824	10.3					5670.	5670.	5670.	5670.	5670.	5670.
												6420.	6420.	6420.	6420.	6420.	6420.
M_{III} .001881	.163	.0107	.000592	.0000389	.162	.0106	9.95					3710.	3710.	3710.	3710.	3710.	3710.
												4240.	4240.	4240.	4240.	4240.	4240.
.002	.162	.0114	.000631	.0000442	.162	.0114	9.84					3600.	3600.	3600.	3600.	3600.	3600.
M_{II} .002090	.162	.0120	.000660	.0000485	.161	.0119	9.77					3170.	3170.	3180.	3170.	3170.	3170.
												3780.	3780.	3780.	3780.	3780.	3780.
M_I .002306	.162	.0134	.000724	.0000599	.161	.0133	9.55					2960.	2960.	2970.	2960.	2960.	2960.
												3520.	3520.	3530.	3520.	3520.	3520.
.003	.162	.0178	.000938	.000103	.161	.0176	8.88					1770.	1770.	1780.	1770.	1770.	1770.
.004	.161	.0237	.00124	.000183	.160	.0236	7.91					824.	824.	831.	824.	824.	824.
.005	.160	.0293	.00154	.000281	.159	.0290	7.06					456.	456.	463.	456.	456.	456.
.006	.160	.0344	.00183	.000392	.158	.0340	6.27					283.	283.	289.	283.	283.	283.
.008	.159	.0431	.00240	.000652	.156	.0424	5.03					130.	130.	135.	130.	130.	130.
L_{III} .008648	.158	.0456	.00258	.000745	.156	.0449	4.71					107.	107.	111.	107.	107.	107.
												311.	256.	316.	311.	311.	256.
L_{II} .009617	.158	.0492	.00285	.000888	.155	.0485	4.24					232.	196.	237.	232.	232.	196.
												321.	268.	325.	321.	321.	268.
.01	.158	.0506	.00295	.000948	.155	.0496	4.10					290.	244.	294.	290.	290.	244.
L_I .010116	.158	.0510	.00299	.000966	.154	.0499	4.06					282.	237.	286.	282.	282.	237.
												325.	274.	330.	325.	325.	274.
.015	.155	.0652	.00428	.00180	.150	.0635	2.62					112.	99.8	114.	112.	112.	99.8
.02	.152	.0766	.00549	.00277	.147	.0738	1.85					52.0	47.8	53.8	52.0	52.0	47.8
.03	.147	.0906	.00766	.00471	.139	.0859	1.08					17.4	16.4	18.5	17.5	17.4	16.4
.04	.142	.0980	.00948	.00652	.133	.0916	.702					7.91	7.59	8.70	8.02	7.91	7.59
.05	.138	.102	.0112	.00827	.127	.0941	.492					4.24	4.10	4.85	4.35	4.24	4.10
K .059390	.134	.104	.0125	.00970	.122	.0948	.374					2.61	2.54	3.09	2.71	2.62	2.55
												14.0	4.46	14.5	14.2	14.0	4.46
.06	.134	.105	.0126	.00984	.122	.0948	.367					13.6	4.42	14.1	13.7	13.6	4.42
.08	.127	.106	.0149	.0124	.112	.0934	.225					6.31	3.12	6.63	6.42	6.31	3.13
.1	.121	.105	.0167	.0145	.104	.0906	.149					3.48	2.07	3.74	3.56	3.49	2.08
.15	.109	.101	.0198	.0183	.0895	.0827	.0702					1.17	.852	1.34	1.27	1.19	.870
.2	.0998	.0948	.0216	.0205	.0784	.0742	.0406					.535	.428	.670	.631	.556	.449
.3	.0870	.0845	.0234	.0228	.0635	.0617	.0185					.178	.154	.281	.263	.202	.177
.4	.0777	.0763	.0241	.0234	.0538	.0531	.0104					.0848	.0763	.171	.161	.109	.0995
.5	.0709	.0702	.0242	.0237	.0467	.0467	.00677					.0488	.0449	.126	.119	.0731	.0684
.6	.0660	.0652	.0242	.0236	.0417	.0417	.00471					.0316	.0294	.102	.0970	.0556	.0531
.8	.0578	.0574	.0236	.0229	.0342	.0345	.00267					.0164	.0156	.0763	.0738	.0399	.0385
1.	.0520	.0517	.0229	.0217	.0291	.0300	.00171					.0103	.00991	.0638	.0620	.0332	.0316
1.5	.0421	.0421	.0209	.0199	.0213	.0222	.000774	.00121		.00121	.000367	.00496	.00481	.0488	.0481	.0271	.0251
2.	.0360	.0360	.0191	.0180	.0169	.0180	.000435	.00396		.00396	.00181	.00299	.00293	.0436	.0428	.0261	.0227
3.	.0283	.0283	.0163	.0148	.0120	.0135	.000195	.00955	.00000991	.00955	.00581	.00160	.00158	.0396	.0396	.0275	.0222
4.	.0237	.0237	.0144	.0127	.00930	.0110	.000111	.0145	.0000406	.0146	.00980	.00106	.00105	.0396	.0392	.0300	.0235
5.	.0204	.0204	.0128	.0109	.00759	.00948	.0000720	.0186	.0000795	.0187	.0132	.000784	.000777	.0399	.0399	.0323	.0249
6.	.0181	.0181	.0116	.00959	.00642	.00848	.0000499	.0219	.000124	.0220	.0159	.000620	.000617	.0406	.0406	.0343	.0261
8.	.0148	.0148	.00984	.00770	.00492	.00706	.0000283	.0272	.000209	.0274	.0200	.000431	.000428	.0424	.0424	.0378	.0281
10.	.0126	.0126	.00859	.00635	.00399	.00624	.0000180	.0321	.000288	.0324	.0235	.000331	.000329	.0453	.0453	.0414	.0301
15.	.00930	.00930	.00660	.00460	.00270	.00471	.0000072	.0410	.000446	.0414	.0286	.000205	.000204	.0510	.0510	.0481	.0334
20.	.00749	.00749	.00542	.00349	.00204	.00399	.0000037	.0481	.000563	.0488	.0313	.000148	.000147	.0563	.0563	.0545	.0349
30.	.00545	.00545	.00406	.00224	.00138	.00322		.0574	.000731	.0581	.0337	.0000941	.0000941	.0638	.0638	.0624	.0360
40.	.00431	.00431	.00329	.00158	.00104	.00273		.0642	.000856	.0649	.0336	.0000692	.0000692	.0692	.0692	.0681	.0353
50.	.00360	.00360	.00278	.00120	.000831	.00240		.0688	.000948	.0699	.0330	.0000545	.0000545	.0734	.0734	.0727	.0343
60.	.00311	.00311	.00241	.000941	.000695	.00217		.0727	.00102	.0738	.0326	.0000446	.0000446	.0770	.0770	.0763	.0336
80.	.00245	.00245	.00193	.000638	.000524	.00181		.0784	.00113	.0795	.0316	.0000328	.0000328	.0820	.0820	.0816	.0321
100.	.00204	.00204	.00162	.000467	.000421	.00157		.0824	.00121	.0834	.0302	.0000259	.0000259	.0856	.0856	.0852	.0307

70 YTTERBIUM
(barns/atom)

E (MeV)	$\sigma^{KN}_{inc,t}$	$\sigma^{BD}_{inc,t}$	$\sigma^{KN}_{inc,a}$	$\sigma^{BD}_{inc,a}$	$\sigma^{KN}_{inc,s}$	$\sigma^{BD}_{inc,s}$	σ_{coh}	σ_{κ_n}	σ_{κ_e}	$\sigma_{\kappa,t}$	$\sigma_{\kappa,a}$	$\sigma_{\gamma,t}$	$\sigma_{\gamma,a}$	$\sigma_{tot,t}$	$\sigma_{tot,t-coh}$	$\sigma_{tot,a}$	$\sigma_{tot,en}$
.001	46.4	1.36	.0904	.00265	46.3	1.36	3110.					1310000.	1310000.	1310000.	1310000.	1310000.	1310000.
.0015	46.3	2.27	.135	.00662	46.2	2.26	2980.					543000.	543000.	546000.	543000.	543000.	543000.
M_V .001528	46.3	2.32	.137	.00689	46.1	2.31	2980.					522000.	522000.	525000.	522000.	522000.	522000.
												1630000.	1630000.	1630000.	1630000.	1630000.	1630000.
M_{IV} .001577	46.3	2.41	.142	.00739	46.1	2.40	2960.					1520000.	1520000.	1520000.	1520000.	1520000.	1520000.
												1730000.	1730000.	1730000.	1730000.	1730000.	1730000.
M_{III} .001950	46.2	3.08	.175	.0117	46.0	3.07	2860.					1000000.	1000000.	1000000.	1000000.	1000000.	1000000.
												1150000.	1150000.	1150000.	1150000.	1150000.	1150000.
.002	46.2	3.17	.179	.0123	46.0	3.16	2850.					1070000.	1070000.	1070000.	1070000.	1070000.	1070000.
M_{II} .002175	46.2	3.49	.195	.0147	46.0	3.48	2800.					853000.	853000.	856000.	853000.	853000.	853000.
												1010000.	1010000.	1010000.	1010000.	1010000.	1010000.
M_I .002398	46.1	3.89	.214	.0181	45.9	3.87	2740.					797000.	797000.	800000.	797000.	797000.	797000.
												944000.	944000.	947000.	944000.	944000.	944000.
.003	46.0	4.95	.267	.0287	45.8	4.92	2570.					527000.	527000.	530000.	527000.	527000.	527000.
.004	45.8	6.64	.353	.0511	45.5	6.59	2300.					246000.	246000.	248000.	246000.	246000.	246000.
.005	45.7	8.20	.437	.0785	45.2	8.12	2050.					136000.	136000.	138000.	136000.	136000.	136000.
.006	45.5	9.63	.521	.110	45.0	9.52	1830.					84900.	84900.	86700.	84900.	84900.	84900.
.008	45.2	12.1	.683	.183	44.5	11.9	1470.					38800.	38800.	40300.	38800.	38800.	38800.
L_{III} .008943	45.0	13.2	.758	.222	44.2	13.0	1330.					29100.	29100.	30400.	29100.	29100.	29100.
												84000.	69000.	85300.	84000.	84000.	69000.
L_{II} .009978	44.8	14.2	.839	.266	44.0	13.9	1200.					62300.	52300.	63500.	62300.	62300.	52300.
												86100.	71700.	87300.	86100.	86100.	71700.
.01	44.8	14.2	.840	.266	44.0	13.9	1200.					85800.	71500.	87000.	85800.	85800.	71500.
L_I .010489	44.7	14.7	.879	.289	43.9	14.4	1140.					75600.	63600.	76800.	75600.	75600.	63600.
												87500.	73400.	88700.	87500.	87500.	73400.
.015	44.0	18.4	1.22	.509	42.8	17.9	765.					33300.	29600.	34100.	33300.	33300.	29600.
.02	43.3	21.6	1.56	.780	41.7	20.8	538.					15400.	14100.	16000.	15400.	15400.	14100.
.03	41.8	25.6	2.18	1.33	39.7	24.3	314.					5180.	4890.	5520.	5210.	5180.	4890.
.04	40.5	27.8	2.70	1.85	37.8	25.9	204.					2360.	2260.	2590.	2390.	2360.	2260.
.05	39.3	29.1	3.17	2.35	36.1	26.8	144.					1260.	1220.	1430.	1290.	1260.	1220.
.06	38.2	29.7	3.58	2.79	34.6	26.9	107.					755.	734.	892.	785.	759.	737.
K .061332	38.0	29.8	3.63	2.84	34.4	27.0	103.					712.	692.	845.	742.	716.	695.
												3800.	1210.	3930.	3830.	3800.	1210.
.08	36.2	30.1	4.24	3.52	32.0	26.6	65.4					1870.	892.	1970.	1900.	1870.	896.
.1	34.5	29.9	4.76	4.13	29.7	25.8	43.3					1020.	593.	1090.	1050.	1020.	597.
.15	31.1	28.7	5.63	5.21	25.4	23.5	20.4					348.	251.	397.	377.	354.	246.
.2	28.4	27.0	6.15	5.84	22.3	21.2	11.8					160.	127.	199.	187.	166.	133.
.3	24.7	24.0	6.67	6.47	18.1	17.5	5.38					53.2	45.8	82.6	77.2	59.9	52.3
.4	22.2	21.7	6.87	6.64	15.3	15.1	3.05					25.3	22.7	50.0	47.0	32.2	29.3
.5	20.2	20.0	6.90	6.74	13.3	13.3	1.98					14.6	13.4	36.6	34.6	21.5	20.1
.6	18.7	18.5	6.88	6.68	11.8	11.8	1.37					9.50	8.84	29.4	28.0	16.4	15.5
.8	16.4	16.3	6.72	6.50	9.72	9.80	.780					4.90	4.64	22.0	21.2	11.6	11.1
1.	14.8	14.7	6.50	6.16	8.28	8.54	.500					3.10	2.97	18.3	17.8	9.60	9.13
1.5	12.0	12.0	5.94	5.68	6.07	6.32	.225	.353		.353	.107	1.49	1.45	14.1	13.8	7.78	7.24
2.	10.2	10.2	5.44	5.09	4.81	5.11	.127	1.16		1.16	.532	.895	.876	12.4	12.3	7.49	6.50
3.	8.06	8.05	4.65	4.20	3.41	3.85	.0569	2.77	.00282	2.77	1.69	.478	.471	11.4	11.3	7.90	6.36
4.	6.73	6.73	4.09	3.59	2.65	3.14	.0321	4.20	.0116	4.21	2.83	.318	.315	11.3	11.3	8.62	6.73
5.	5.82	5.82	3.65	3.11	2.16	2.71	.0210	5.39	.0227	5.41	3.81	.236	.234	11.5	11.5	9.30	7.15
6.	5.14	5.14	3.31	2.72	1.83	2.42	.0145	6.32	.0352	6.36	4.57	.186	.185	11.7	11.7	9.86	7.47
8.	4.20	4.20	2.80	2.19	1.40	2.01	.00826	7.85	.0595	7.91	5.76	.129	.128	12.2	12.2	10.8	8.09
10.	3.58	3.58	2.45	1.90	1.13	1.78	.00527	9.26	.0820	9.34	6.76	.0990	.0986	13.0	13.0	11.9	8.66
15.	2.65	2.65	1.88	1.30	.769	1.35	.00210	11.9	.127	12.0	8.26	.0610	.0608	14.7	14.7	13.9	9.67
20.	2.13	2.13	1.55	.986	.582	1.14	.00108	13.8	.160	14.0	8.92	.0442	.0441	16.2	16.2	15.6	9.95
30.	1.55	1.55	1.16	.634	.391	.916		16.5	.207	16.7	9.61	.0284	.0284	18.3	18.3	17.9	10.3
40.	1.23	1.23	.935	.449	.295	.781		18.4	.243	18.6	9.56	.0208	.0208	19.9	19.9	19.6	10.0
50.	1.03	1.03	.791	.342	.237	.688		19.8	.269	20.1	9.47	.0163	.0163	21.1	21.1	20.9	9.83
60.	.885	.885	.687	.267	.198	.618		20.9	.290	21.2	9.30	.0134	.0134	22.1	22.1	21.9	9.58
80.	.698	.698	.549	.181	.149	.517		22.5	.320	22.8	9.01	.00980	.00979	23.5	23.5	23.4	9.20
100.	.580	.580	.460	.133	.119	.447		23.6	.344	23.9	8.57	.00770	.00770	24.5	24.5	24.4	8.71

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(cm^2/g = 0.003480 × barns/atom)

E (MeV)	$(\frac{\mu}{\rho})^{KN}_{inc,t}$	$(\frac{\mu}{\rho})^{BD}_{inc,t}$	$(\frac{\mu}{\rho})^{KN}_{inc,a}$	$(\frac{\mu}{\rho})^{BD}_{inc,a}$	$(\frac{\mu}{\rho})^{KN}_{inc,s}$	$(\frac{\mu}{\rho})^{BD}_{inc,s}$	$(\frac{\mu}{\rho})_{coh}$	$(\frac{\mu}{\rho})_{\kappa_n}$	$(\frac{\mu}{\rho})_{\kappa_e}$	$(\frac{\mu}{\rho})_{\kappa,t}$	$(\frac{\mu}{\rho})_{\kappa,a}$	$(\frac{\mu}{\rho})_{\tau,t}$	$(\frac{\mu}{\rho})_{\tau,a}$	$(\frac{\mu}{\rho})_{tot,t}$	$(\frac{\mu}{\rho})_{tot,t,en}$	$(\frac{\mu}{\rho})_{tot,a}$	$(\frac{\mu}{\rho})_{tot,en}$
.001	.161	.00473	.000315	.00000920	.161	.00473	10.8					4560.	4560.	4560.	4560.	4560.	4560.
.0015	.161	.00790	.000470	.0000230	.161	.00786	10.4					1890.	1890.	1900.	1890.	1890.	1890.
M_V .001528	.161	.00807	.000477	.0000240	.160	.00804	10.4					1820.	1820.	1830.	1820.	1820.	1820.
M_{IV} .001577	.161	.00839	.000494	.0000257	.160	.00835	10.3					5670.	5670.	5670.	5670.	5670.	5670.
M_{III} .001950	.161	.0107	.000609	.0000407	.160	.0107	9.95					5290.	5290.	5290.	5290.	5290.	5290.
.002	.161	.0110	.000623	.0000428	.160	.0110	9.92					6020.	6020.	6020.	6020.	6020.	6020.
M_{II} .002175	.161	.0121	.000679	.0000512	.160	.0121	9.74					3480.	3480.	3480.	3480.	3480.	3480.
M_I .002398	.160	.0135	.000745	.0000630	.160	.0135	9.54					4000.	4000.	4000.	4000.	4000.	4000.
.003	.160	.0172	.000929	.0000999	.159	.0171	8.94					3720.	3720.	3720.	3720.	3720.	3720.
.004	.159	.0231	.00123	.000178	.158	.0229	8.00					2970.	2970.	2980.	2970.	2970.	2970.
.005	.159	.0285	.00152	.000273	.157	.0283	7.13					3510.	3510.	3510.	3510.	3510.	3510.
.006	.158	.0335	.00181	.000383	.157	.0331	6.37					2770.	2770.	2780.	2770.	2770.	2770.
.008	.157	.0421	.00238	.000637	.155	.0414	5.12					3290.	3290.	3300.	3290.	3290.	3290.
L_{III} .008943	.157	.0459	.00264	.000773	.154	.0452	4.63					1830.	1830.	1840.	1830.	1830.	1830.
L_{II} .009978	.156	.0494	.00292	.000926	.153	.0484	4.18					856.	856.	863.	856.	856.	856.
.01	.156	.0494	.00292	.000926	.153	.0484	4.18					473.	473.	480.	473.	473.	473.
L_I .010489	.156	.0512	.00306	.00101	.153	.0501	3.97					295.	295.	302.	295.	295.	295.
.015	.153	.0640	.00425	.00177	.149	.0623	2.66					135.	135.	140.	135.	135.	135.
.02	.151	.0752	.00543	.00271	.145	.0724	1.87					101.	101.	106.	101.	101.	101.
.03	.145	.0891	.00759	.00463	.138	.0846	1.09					292.	240.	297.	292.	292.	240.
.04	.141	.0967	.00940	.00644	.132	.0901	.710					217.	182.	221.	217.	217.	182.
.05	.137	.101	.0110	.00818	.126	.0933	.501					300.	250.	306.	300.	300.	250.
.06	.133	.103	.0125	.00971	.120	.0936	.372					299.	249.	303.	299.	299.	249.
K .061332	.132	.104	.0126	.00988	.120	.0940	.358					261.	221.	267.	263.	263.	221.
.08	.126	.105	.0148	.0122	.111	.0926	.228					304.	255.	309.	304.	304.	255.
.1	.120	.104	.0166	.0144	.103	.0898	.151					116.	103.	119.	116.	116.	103.
.15	.108	.0999	.0196	.0181	.0884	.0818	.0710					53.6	49.1	55.7	53.6	53.6	49.1
.2	.0988	.0940	.0214	.0203	.0776	.0738	.0411					18.0	17.0	19.2	18.1	18.0	17.0
.3	.0860	.0835	.0232	.0225	.0630	.0609	.0187					8.21	7.86	9.01	8.32	8.21	7.86
.4	.0773	.0755	.0239	.0231	.0532	.0525	.0106					4.38	4.25	4.98	4.49	4.38	4.25
.5	.0703	.0696	.0240	.0235	.0463	.0463	.00689					2.63	2.55	3.10	2.73	2.64	2.56
.6	.0651	.0644	.0239	.0232	.0411	.0411	.00477					2.48	2.41	2.94	2.58	2.49	2.42
.8	.0571	.0567	.0234	.0226	.0338	.0341	.00271					13.2	4.21	13.7	13.3	13.2	4.21
1.	.0515	.0512	.0226	.0214	.0288	.0297	.00174					6.51	3.10	6.86	6.61	6.51	3.12
1.5	.0418	.0418	.0207	.0198	.0211	.0220	.000783	.00123		.00123	.000372	3.55	2.06	3.79	3.65	3.55	2.08
2.	.0355	.0355	.0189	.0177	.0167	.0178	.000442	.00404		.00404	.00185	1.21	.873	1.38	1.31	1.23	.891
3.	.0280	.0280	.0162	.0146	.0119	.0134	.000198	.00964	.00000981	.00964	.00588	.557	.442	.693	.651	.578	.463
4.	.0234	.0234	.0142	.0125	.00922	.0109	.000112	.0146	.0000404	.0147	.00985	.185	.159	.287	.269	.208	.182
5.	.0203	.0203	.0127	.0108	.00752	.00943	.0000731	.0188	.0000790	.0188	.0133	.0880	.0790	.174	.166	.112	.102
6.	.0179	.0179	.0115	.00947	.00637	.00842	.0000505	.0220	.000122	.0221	.0159	.0508	.0466	.127	.120	.0748	.0699
8.	.0146	.0146	.00974	.00762	.00487	.00699	.0000287	.0273	.000207	.0275	.0200	.0331	.0308	.102	.0974	.0571	.0539
10.	.0125	.0125	.00853	.00626	.00393	.00619	.0000183	.0322	.000285	.0325	.0235	.0171	.0161	.0766	.0738	.0404	.0386
15.	.00922	.00922	.00654	.00452	.00268	.00470	.0000073	.0414	.000442	.0418	.0287	.0108	.0103	.0637	.0619	.0334	.0318
20.	.00741	.00741	.00539	.00343	.00203	.00397	.0000038	.0480	.000557	.0487	.0310	.00519	.00505	.0491	.0480	.0271	.0252
30.	.00539	.00539	.00404	.00221	.00136	.00319		.0574	.000720	.0581	.0334	.00311	.00305	.0432	.0428	.0261	.0226
40.	.00428	.00428	.00325	.00156	.00103	.00272		.0640	.000846	.0647	.0333	.00166	.00164	.0397	.0393	.0275	.0221
50.	.00358	.00358	.00275	.00119	.000825	.00239		.0689	.000936	.0699	.0330	.00111	.00110	.0393	.0393	.0300	.0234
60.	.00308	.00308	.00239	.000929	.000689	.00215		.0727	.00101	.0738	.0324	.000821	.000814	.0400	.0400	.0324	.0240
80.	.00243	.00243	.00191	.000630	.000519	.00180		.0783	.00111	.0793	.0314	.000647	.000644	.0407	.0407	.0343	.0260
100.	.00202	.00202	.00160	.000463	.000414	.00156		.0821	.00120	.0832	.0298	.000449	.000445	.0425	.0425	.0376	.0281
												.000345	.000343	.0452	.0452	.0414	.0301
												.000212	.000212	.0512	.0512	.0484	.0335
												.000154	.000153	.0564	.0564	.0543	.0344
												.0000988	.0000988	.0637	.0637	.0623	.0358
												.0000724	.0000724	.0693	.0693	.0682	.0348
												.0000567	.0000567	.0734	.0734	.0727	.0342
												.0000466	.0000466	.0769	.0769	.0762	.0333
												.0000341	.0000341	.0818	.0818	.0814	.0320
												.0000268	.0000268	.0853	.0853	.0849	.0303

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(barns/atom)

E (MeV)	$\sigma^{KN}_{inc,t}$	$\sigma^{BD}_{inc,t}$	$\sigma^{KN}_{inc,a}$	$\sigma^{BD}_{inc,a}$	$\sigma^{KN}_{inc,s}$	$\sigma^{BD}_{inc,s}$	σ_{coh}	$\sigma_{\kappa n}$	$\sigma_{\kappa e}$	$\sigma_{\kappa,t}$	$\sigma_{\kappa,a}$	$\sigma_{r,t}$	$\sigma_{r,a}$	$\sigma_{tot,t}$	$\sigma_{tot,t-coh}$	$\sigma_{tot,a}$	$\sigma_{tot,en}$
.001	47.0	1.35	.0917	.00263	47.0	1.35	3200.					1360000.	1360000.	1360000.	1360000.	1360000.	1360000.
.0015	47.0	2.27	.137	.00662	46.8	2.26	3070.					567000.	567000.	570000.	567000.	567000.	567000.
M_V .001591	46.9	2.44	.145	.00754	46.8	2.43	3040.					500000.	500000.	503000.	500000.	500000.	500000.
M_{IV} .001641	46.9	2.53	.150	.00807	46.8	2.52	3030.					1560000.	1560000.	1560000.	1560000.	1560000.	1560000.
.002	46.9	3.18	.182	.0123	46.7	3.17	2930.					1460000.	1460000.	1460000.	1460000.	1460000.	1460000.
M_{III} .002024	46.9	3.22	.184	.0126	46.7	3.21	2920.					1650000.	1650000.	1650000.	1650000.	1650000.	1650000.
M_{II} .002264	46.8	3.66	.205	.0161	46.6	3.64	2850.					987000.	987000.	990000.	987000.	987000.	987000.
M_I .002494	46.8	4.07	.226	.0197	46.5	4.05	2790.					961000.	961000.	964000.	961000.	961000.	961000.
.003	46.7	4.96	.271	.0287	46.4	4.93	2640.					1110000.	1110000.	1110000.	1110000.	1110000.	1110000.
.004	46.5	6.65	.358	.0512	46.1	6.60	2370.					816000.	816000.	819000.	816000.	816000.	816000.
.005	46.3	8.23	.444	.0788	45.9	8.15	2110.					971000.	971000.	974000.	971000.	971000.	971000.
.006	46.1	9.67	.528	.111	45.6	9.56	1880.					764000.	764000.	767000.	764000.	764000.	764000.
.008	45.8	12.2	.693	.185	45.1	12.0	1520.					902000.	902000.	905000.	902000.	902000.	902000.
L_{III} .009245	45.6	13.6	.793	.237	44.8	13.4	1330.					557000.	557000.	560000.	557000.	557000.	557000.
.01	45.5	14.4	.852	.270	44.6	14.1	1240.					261000.	261000.	263000.	261000.	261000.	261000.
L_{II} .010349	45.4	14.7	.881	.285	44.5	14.4	1200.					144000.	144000.	146000.	144000.	144000.	144000.
L_I .010874	45.3	15.2	.921	.309	44.4	14.9	1140.					90100.	90100.	92000.	90100.	90100.	90100.
.015	44.7	18.6	1.23	.514	43.4	18.1	793.					41500.	41500.	43000.	41500.	41500.	41500.
.02	43.9	21.8	1.58	.787	42.3	21.0	557.					28300.	28300.	29800.	28300.	28300.	28300.
.03	42.4	25.9	2.21	1.35	40.2	24.6	326.					80900.	66100.	82200.	80900.	80900.	66100.
.04	41.1	28.1	2.74	1.87	38.3	26.2	212.					65200.	54100.	66500.	65200.	65200.	54100.
.05	39.9	29.4	3.22	2.37	36.7	27.0	149.					59600.	49800.	60800.	59600.	59600.	49800.
.06	38.7	30.1	3.63	2.82	35.1	27.3	111.					82300.	68200.	83500.	82300.	82300.	68200.
K .063316	38.4	30.2	3.75	2.95	34.6	27.2	102.					72400.	60600.	73600.	72400.	72400.	60600.
.08	36.7	30.4	4.30	3.56	32.4	26.8	67.8					83800.	70000.	85000.	83800.	83800.	70000.
.1	35.0	30.2	4.83	4.17	30.2	26.0	44.9					35300.	31100.	36100.	35300.	35300.	31100.
.15	31.5	29.1	5.72	5.28	25.8	23.8	21.2					16400.	14900.	17000.	16400.	16400.	14900.
.2	28.9	27.3	6.24	5.90	22.6	21.4	12.3					5500.	5170.	5850.	5530.	5500.	5170.
.3	25.1	24.3	6.76	6.55	18.3	17.7	5.58					2500.	2390.	2740.	2530.	2500.	2390.
.4	22.5	22.0	6.97	6.73	15.5	15.3	3.16					1350.	1300.	1530.	1380.	1350.	1300.
.5	20.5	20.2	7.00	6.81	13.5	13.4	2.05					809.	785.	950.	839.	813.	788.
.6	19.0	18.8	6.98	6.79	12.0	12.0	1.42					693.	673.	825.	723.	697.	676.
.8	16.7	16.6	6.82	6.62	9.86	9.98	.810					3660.	1160.	3790.	3690.	3660.	1160.
1.	15.0	14.9	6.60	6.24	8.40	8.66	.519					1960.	900.	2060.	1990.	1960.	904.
1.5	12.2	12.1	6.03	5.72	6.16	6.38	.233	.366		.366	.111	1070.	607.	1150.	1100.	1070.	611.
2.	10.4	10.4	5.51	5.19	4.88	5.21	.131	1.20		1.20	.551	367.	261.	417.	396.	373.	266.
3.	8.17	8.16	4.71	4.26	3.45	3.90	.0589	2.86	.00286	2.86	1.74	169.	132.	209.	196.	175.	138.
4.	6.83	6.83	4.14	3.63	2.69	3.20	.0333	4.31	.0117	4.32	2.90	56.7	48.5	86.6	81.0	63.5	55.8
5.	5.90	5.90	3.70	3.14	2.19	2.76	.0217	5.53	.0230	5.55	3.90	26.9	24.0	52.1	48.9	33.9	30.7
6.	5.21	5.21	3.36	2.76	1.86	2.45	.0151	6.50	.0357	6.54	4.69	15.5	14.2	37.8	35.7	22.5	21.0
8.	4.26	4.26	2.84	2.21	1.42	2.05	.00857	8.05	.0601	8.11	5.89	10.0	9.28	30.2	28.8	17.0	16.1
10.	3.63	3.63	2.48	1.82	1.15	1.81	.00549	9.50	.0830	9.58	6.93	5.20	4.92	22.6	21.8	12.0	11.5
15.	2.69	2.69	1.91	1.32	.780	1.37	.00219	12.2	.128	12.3	8.43	3.28	3.14	18.7	18.2	9.88	9.38
20.	2.16	2.16	1.57	.998	.590	1.16	.00111	14.2	.162	14.4	9.15	1.57	1.52	14.3	14.0	7.97	7.35
30.	1.57	1.57	1.17	.641	.397	.929		17.0	.210	17.2	9.86	.946	.926	12.7	12.5	7.66	6.67
40.	1.25	1.25	.949	.454	.300	.796		18.9	.246	19.1	9.78	.507	.500	11.6	11.5	8.08	6.50
50.	1.04	1.04	.802	.344	.240	.696		20.3	.272	20.6	9.67	.337	.333	11.5	11.5	8.80	6.86
60.	.897	.897	.697	.270	.201	.627		21.4	.293	21.7	9.48	.251	.249	11.7	11.7	9.50	7.29
80.	.708	.708	.557	.183	.151	.525		23.1	.325	23.4	9.21	.197	.196	12.0	11.9	10.1	7.65
100.	.588	.588	.467	.135	.121	.453		24.3	.349	24.6	8.78	.137	.136	12.5	12.5	11.1	8.24
												.105	.105	13.3	13.3	12.2	8.85
												.0651	.0649	15.1	15.1	14.3	9.81
												.0468	.0467	16.6	16.6	16.0	10.2
												.0300	.0300	18.8	18.8	18.4	10.5
												.0220	.0220	20.4	20.4	20.1	10.3
												.0173	.0173	21.7	21.7	21.4	10.0
												.0142	.0142	22.6	22.6	22.4	9.76
												.0104	.0104	24.1	24.1	24.0	9.40
												.00820	.00820	25.2	25.2	25.1	8.92

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(cm^2/g = 0.003442 x barns/atom)

E (MeV)	$(\frac{\mu}{\rho})^{KN}_{inc,t}$	$(\frac{\mu}{\rho})^{BD}_{inc,t}$	$(\frac{\mu}{\rho})^{KN}_{inc,a}$	$(\frac{\mu}{\rho})^{BD}_{inc,a}$	$(\frac{\mu}{\rho})^{KN}_{inc,s}$	$(\frac{\mu}{\rho})^{BD}_{inc,s}$	$(\frac{\mu}{\rho})_{coh}$	$(\frac{\mu}{\rho})_{\kappa n}$	$(\frac{\mu}{\rho})_{\kappa e}$	$(\frac{\mu}{\rho})_{\kappa,t}$	$(\frac{\mu}{\rho})_{\kappa,a}$	$(\frac{\mu}{\rho})_{\tau,t}$	$(\frac{\mu}{\rho})_{\tau,a}$	$(\frac{\mu}{\rho})_{tot,t}$	$(\frac{\mu}{\rho})_{tot,t-coh}$	$(\frac{\mu}{\rho})_{tot,a}$	$(\frac{\mu}{\rho})_{tot,er}$
.001	.162	.00465	.000316	.0000091	.162	.00465	11.0					4680.	4680.	4680.	4680.	4680.	4680.
.0015	.162	.00781	.000472	.0000228	.161	.00778	10.6					1950.	1950.	1940.	1950.	1950.	1950.
M_V .001591	.161	.00840	.000499	.0000260	.161	.00836	10.5					1720.	1720.	1730.	1720.	1720.	1720.
M_{IV} .001641	.161	.00871	.000516	.0000278	.161	.00867	10.4					5370.	5370.	5370.	5370.	5370.	5370.
.002	.161	.0109	.000626	.0000423	.161	.0109	10.1					5030.	5030.	5030.	5030.	5030.	5030.
M_{III} .002024	.161	.0111	.000633	.0000434	.161	.0110	10.1					5680.	5680.	5680.	5680.	5680.	5680.
M_{II} .002264	.161	.0126	.000706	.0000554	.160	.0125	9.81					3400.	3400.	3410.	3400.	3400.	3400.
M_I .002494	.161	.0140	.000778	.0000678	.160	.0139	9.60					3310.	3310.	3320.	3310.	3310.	3310.
.003	.161	.0171	.000933	.0000988	.160	.0170	9.09					3820.	3820.	3820.	3820.	3820.	3820.
.004	.160	.0229	.00123	.000176	.159	.0227	8.16					2810.	2810.	2820.	2810.	2810.	2810.
.005	.159	.0283	.00153	.000271	.158	.0281	7.26					3340.	3340.	3350.	3340.	3340.	3340.
.006	.159	.0333	.00182	.000382	.157	.0329	6.47					2630.	2630.	2640.	2630.	2630.	2630.
.008	.158	.0420	.00239	.000637	.155	.0413	5.23					3100.	3100.	3120.	3100.	3100.	3100.
L_{III} .009245	.157	.0468	.00273	.000816	.154	.0461	4.58					1920.	1920.	1930.	1920.	1920.	1920.
.01	.157	.0496	.00293	.000929	.154	.0485	4.27					898.	898.	905.	898.	898.	898.
L_{II} .010349	.156	.0506	.00303	.000981	.153	.0496	4.13					496.	496.	503.	496.	496.	496.
L_I .010874	.156	.0523	.00317	.00106	.153	.0513	3.92					310.	310.	317.	310.	310.	310.
.015	.154	.0640	.00423	.00177	.149	.0623	2.73					143.	143.	148.	143.	143.	143.
.02	.151	.0750	.00544	.00271	.146	.0723	1.92					97.4	97.4	102.	97.4	97.4	97.4
.03	.146	.0891	.00761	.00465	.138	.0847	1.12					278.	228.	283.	278.	278.	228.
.04	.141	.0967	.00943	.00644	.132	.0902	.730					224.	186.	229.	224.	224.	186.
.05	.137	.101	.0111	.00816	.126	.0929	.513					205.	171.	209.	205.	205.	171.
.06	.133	.104	.0125	.00971	.121	.0940	.382					283.	235.	287.	283.	283.	235.
K .063316	.132	.104	.0129	.0102	.119	.0936	.351					249.	209.	253.	249.	249.	209.
.08	.126	.105	.0148	.0123	.112	.0922	.233					288.	241.	293.	288.	288.	241.
.1	.120	.104	.0166	.0144	.104	.0895	.155					122.	107.	124.	122.	122.	107.
.15	.108	.100	.0197	.0182	.0888	.0819	.0730					56.4	51.3	58.5	56.4	56.4	51.3
.2	.0995	.0940	.0215	.0203	.0778	.0737	.0423					18.9	17.8	20.1	19.0	18.9	17.8
.3	.0864	.0836	.0233	.0225	.0630	.0609	.0192					8.60	8.23	9.43	8.71	8.60	8.23
.4	.0774	.0757	.0240	.0232	.0534	.0527	.0109					4.65	4.47	5.27	4.75	4.65	4.47
.5	.0706	.0695	.0241	.0234	.0465	.0461	.00706					2.78	2.70	3.27	2.89	2.80	2.71
.6	.0654	.0647	.0240	.0234	.0413	.0413	.00489					2.39	2.32	2.84	2.49	2.40	2.33
.8	.0575	.0571	.0235	.0228	.0339	.0344	.00279					12.6	3.99	13.0	12.7	12.6	3.99
1.	.0516	.0513	.0227	.0215	.0289	.0298	.00179					6.75	3.10	7.09	6.85	6.75	3.11
1.5	.0420	.0416	.0208	.0197	.0212	.0220	.000802	.00126		.00126	.000382	3.68	2.09	3.96	3.79	3.68	2.10
2.	.0358	.0358	.0190	.0179	.0168	.0179	.000451	.00413		.00413	.00190	1.26	.898	1.44	1.36	1.28	.916
3.	.0281	.0281	.0162	.0147	.0119	.0134	.000203	.00984	.00000984	.00984	.00599	.582	.454	.719	.675	.602	.475
4.	.0235	.0235	.0142	.0125	.00926	.0110	.000115	.0148	.0000403	.0149	.00998	.195	.167	.298	.279	.219	.189
5.	.0203	.0203	.0127	.0108	.00754	.00950	.0000747	.0190	.0000792	.0191	.0134	.0926	.0826	.179	.168	.117	.106
6.	.0179	.0179	.0116	.00950	.00640	.00843	.0000520	.0224	.000123	.0225	.0161	.0534	.0489	.130	.123	.0774	.0723
8.	.0147	.0147	.00978	.00761	.00489	.00706	.0000295	.0277	.000207	.0279	.0203	.0344	.0319	.104	.0991	.0585	.0554
10.	.0125	.0125	.00854	.00626	.00396	.00623	.0000189	.0327	.000286	.0330	.0239	.0179	.0169	.0778	.0750	.0413	.0396
15.	.00926	.00926	.00657	.00454	.00268	.00472	.0000075	.0420	.000441	.0423	.0290	.0113	.0108	.0644	.0626	.0340	.0323
20.	.00743	.00743	.00540	.00344	.00203	.00399	.0000038	.0489	.000558	.0496	.0315	.00540	.00523	.0492	.0482	.0274	.0253
30.	.00540	.00540	.00403	.00221	.00137	.00320		.0585	.000723	.0592	.0339	.00326	.00319	.0437	.0430	.0264	.0230
40.	.00430	.00430	.00327	.00156	.00103	.00274		.0651	.000847	.0657	.0337	.00175	.00172	.0399	.0396	.0278	.0224
50.	.00358	.00358	.00276	.00118	.000826	.00240		.0699	.000936	.0709	.0333	.00116	.00115	.0396	.0396	.0303	.0236
60.	.00309	.00309	.00240	.000929	.000692	.00216		.0737	.00101	.0747	.0326	.000864	.000857	.0403	.0403	.0327	.0251
80.	.00244	.00244	.00192	.000630	.000520	.00181		.0795	.00112	.0805	.0317	.000678	.000675	.0413	.0410	.0348	.0263
100.	.00202	.00202	.00161	.000465	.000416	.00156		.0836	.00120	.0847	.0302	.000472	.000468	.0430	.0430	.0382	.0284
												.000361	.000361	.0458	.0458	.0420	.0305
												.000224	.000223	.0520	.0520	.0492	.0338
												.000161	.000161	.0571	.0571	.0551	.0351
												.000103	.000103	.0647	.0647	.0633	.0361
												.0000757	.0000757	.0702	.0702	.0692	.0355
												.0000595	.0000595	.0747	.0747	.0737	.0344
												.0000489	.0000489	.0778	.0778	.0771	.0336
												.0000358	.0000358	.0830	.0830	.0826	.0324
												.0000282	.0000282	.0867	.0867	.0864	.0307

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(barns/atom)

E (MeV)	$\sigma^{KN}_{inc,t}$	$\sigma^{BD}_{inc,t}$	$\sigma^{KN}_{inc,a}$	$\sigma^{BD}_{inc,a}$	$\sigma^{KN}_{inc,s}$	$\sigma^{BD}_{inc,s}$	σ_{coh}	$\sigma_{\pi n}$	$\sigma_{\pi e}$	$\sigma_{\pi,t}$	$\sigma_{\pi,a}$	$\sigma_{r,t}$	$\sigma_{r,a}$	$\sigma_{tot,t}$	$\sigma_{tot,t-coh}$	$\sigma_{tot,a}$	$\sigma_{tot,en}$
.001	47.7	1.34	.0930	.00261	47.6	1.34	3290.					1420000.	1420000.	1420000.	1420000.	1420000.	1420000.
.0015	47.6	2.27	.139	.00662	47.5	2.26	3160.					593000.	593000.	596000.	593000.	593000.	593000.
K_V .001662	47.6	2.57	.154	.00830	47.4	2.56	3110.					475000.	475000.	478000.	475000.	475000.	475000.
												1490000.	1490000.	1490000.	1490000.	1490000.	1490000.
K_{IV} .001716	47.6	2.67	.159	.00890	47.4	2.66	3100.					1380000.	1380000.	1380000.	1380000.	1380000.	1380000.
												1570000.	1570000.	1570000.	1570000.	1570000.	1570000.
.002	47.5	3.19	.184	.0124	47.3	3.18	3010.					1050000.	1050000.	1050000.	1050000.	1050000.	1050000.
K_{III} .002108	47.5	3.38	.194	.0138	47.3	3.37	2980.					919000.	919000.	922000.	919000.	919000.	919000.
												1060000.	1060000.	1060000.	1060000.	1060000.	1060000.
K_{II} .002364	47.5	3.84	.217	.0176	47.2	3.82	2900.					776000.	776000.	779000.	776000.	776000.	776000.
												923000.	923000.	926000.	923000.	923000.	923000.
K_I .002600	47.4	4.27	.239	.0215	47.2	4.25	2830.					729000.	729000.	732000.	729000.	729000.	729000.
												859000.	859000.	862000.	859000.	859000.	859000.
.003	47.3	4.97	.274	.0288	47.1	4.94	2710.					588000.	588000.	591000.	588000.	588000.	588000.
.004	47.2	6.66	.363	.0512	46.8	6.61	2430.					277000.	277000.	279000.	277000.	277000.	277000.
.005	47.0	8.25	.450	.0790	46.5	8.17	2170.					154000.	154000.	156000.	154000.	154000.	154000.
.006	46.8	9.71	.536	.111	46.3	9.60	1940.					95400.	95400.	97300.	95400.	95400.	95400.
.008	46.4	12.3	.703	.186	45.7	12.1	1560.					44000.	44000.	45600.	44000.	44000.	44000.
L_{III} .009560	46.2	14.0	.830	.252	45.4	13.7	1340.					27500.	27500.	28900.	27500.	27500.	27500.
												77800.	63300.	79200.	77800.	77800.	63300.
.01	46.1	14.5	.864	.272	45.3	14.2	1280.					68600.	56400.	69900.	68600.	68600.	56400.
L_{II} .010739	46.0	15.2	.924	.305	45.1	14.9	1190.					56900.	47500.	58100.	56900.	56900.	47500.
												78600.	65000.	79800.	78600.	78600.	65000.
L_I .011272	45.9	15.7	.966	.330	44.9	15.4	1130.					69200.	57800.	70300.	69200.	69200.	57800.
												80200.	66800.	81300.	80200.	80200.	66800.
.015	45.3	18.7	1.25	.517	44.0	18.2	822.					37200.	32500.	38000.	37200.	37200.	32500.
.02	44.5	22.0	1.60	.794	42.9	21.2	577.					17300.	15700.	17900.	17300.	17300.	15700.
.03	43.0	26.1	2.24	1.36	40.8	24.7	337.					5840.	5470.	6200.	5870.	5840.	5470.
.04	41.7	28.4	2.78	1.89	38.9	26.5	220.					2660.	2530.	2910.	2690.	2660.	2530.
.05	40.4	29.7	3.26	2.40	37.2	27.3	154.					1440.	1390.	1620.	1470.	1440.	1390.
.06	39.3	30.4	3.69	2.85	35.6	27.5	115.					855.	828.	1000.	885.	859.	831.
K .065345	38.7	30.6	3.88	3.07	34.8	27.5	100.					674.	655.	805.	705.	678.	658.
												3530.	1120.	3660.	3560.	3530.	1120.
.08	37.2	30.8	4.36	3.61	32.9	27.2	70.3					2050.	906.	2150.	2080.	2050.	910.
.1	35.5	30.6	4.90	4.22	30.6	26.4	46.6					1130.	626.	1210.	1140.	1130.	630.
.15	31.9	29.4	5.80	5.34	26.1	24.1	22.0					385.	270.	436.	414.	391.	275.
.2	29.3	27.7	6.33	5.99	22.9	21.7	12.7					177.	137.	217.	205.	183.	143.
.3	25.4	24.7	6.86	6.66	18.6	18.0	5.79					60.1	51.2	90.6	84.8	67.0	57.9
.4	22.8	22.3	7.06	6.82	15.7	15.5	3.27					28.4	25.2	54.0	50.7	35.5	32.0
.5	20.8	20.5	7.10	6.89	13.7	13.6	2.12					16.5	15.0	39.1	37.0	23.6	21.9
.6	19.3	19.1	7.08	6.90	12.2	12.2	1.47					10.6	9.81	31.2	29.7	17.7	16.7
.8	16.9	16.8	6.92	6.70	10.0	10.1	.840					5.50	5.19	23.1	22.3	12.4	11.9
1.	15.2	15.1	6.69	6.31	8.52	8.79	.536					3.49	3.33	19.1	18.6	10.2	9.64
1.5	12.4	12.3	6.11	5.81	6.24	6.49	.242	.380		.380	.115	1.66	1.61	14.6	14.3	8.15	7.53
2.	10.5	10.5	5.59	5.24	4.94	5.26	.136	1.24		1.24	.569	1.00	.978	12.9	12.7	7.83	6.79
3.	8.29	8.28	4.78	4.31	3.50	3.97	.0610	2.95	.00290	2.98	1.79	.540	.532	11.8	11.8	8.27	6.63
4.	6.93	6.93	4.20	3.68	2.72	3.25	.0345	4.44	.0119	4.45	2.98	.360	.356	11.8	11.7	9.01	7.02
5.	5.98	5.98	3.76	3.18	2.23	2.80	.0225	5.67	.0233	5.69	4.00	.269	.267	12.0	11.9	9.72	7.45
6.	5.29	5.29	3.40	2.79	1.88	2.50	.0156	6.66	.0362	6.70	4.79	.212	.210	12.2	12.2	10.3	7.79
8.	4.32	4.32	2.89	2.24	1.44	2.08	.00889	8.26	.0610	8.32	6.03	.146	.145	12.8	12.8	11.4	8.41
10.	3.68	3.68	2.52	1.84	1.17	1.84	.00571	9.75	.0841	9.83	7.10	.112	.112	13.6	13.6	12.5	9.05
15.	2.73	2.73	1.94	1.34	.791	1.39	.00229	12.5	.130	12.6	8.63	.0695	.0693	15.4	15.4	14.6	10.0
20.	2.19	2.19	1.59	1.01	.598	1.18	.00114	14.5	.165	14.7	9.33	.0500	.0499	16.9	16.9	16.3	10.4
30.	1.59	1.59	1.19	.644	.402	.946		17.4	.213	17.6	10.0	.0320	.0320	19.2	19.2	18.8	10.7
40.	1.27	1.27	.962	.460	.304	.810		19.4	.249	19.6	10.0	.0235	.0235	20.9	20.9	20.6	10.5
50.	1.06	1.06	.814	.350	.243	.710		20.8	.276	21.1	9.82	.0184	.0184	22.2	22.2	21.9	10.2
60.	.910	.910	.706	.273	.204	.637		22.0	.296	22.3	9.68	.0151	.0151	23.2	23.2	23.0	9.97
80.	.718	.718	.565	.185	.153	.533		23.6	.329	23.9	9.33	.0110	.0110	24.6	24.6	24.5	9.53
100.	.596	.596	.473	.136	.123	.480		24.9	.352	25.3	8.94	.00870	.00870	25.9	25.9	25.8	9.08

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(cm^2/g = 0.003374 x barns/atom)

E (MeV)	$(\frac{\mu}{\rho})^{KN}_{inc,t}$	$(\frac{\mu}{\rho})^{BD}_{inc,t}$	$(\frac{\mu}{\rho})^{KN}_{inc,a}$	$(\frac{\mu}{\rho})^{BD}_{inc,a}$	$(\frac{\mu}{\rho})^{KN}_{inc,s}$	$(\frac{\mu}{\rho})^{BD}_{inc,s}$	$(\frac{\mu}{\rho})_{coh}$	$(\frac{\mu}{\rho})_{\kappa n}$	$(\frac{\mu}{\rho})_{\kappa e}$	$(\frac{\mu}{\rho})_{\kappa,t}$	$(\frac{\mu}{\rho})_{\kappa,a}$	$(\frac{\mu}{\rho})_{\tau,t}$	$(\frac{\mu}{\rho})_{\tau,a}$	$(\frac{\mu}{\rho})_{tot,t}$	$(\frac{\mu}{\rho})_{tot,t-coh}$	$(\frac{\mu}{\rho})_{tot\ a}$	$(\frac{\mu}{\rho})_{tot,en}$
.001	.161	.00452	.000314	.0000088	.161	.00452	11.1					4790.	4790.	4790.	4790.	4790.	4790.
.0015	.161	.00766	.000469	.0000223	.160	.00763	10.7					2000.	2000.	2010.	2000.	2000.	2000.
M_V .001662	.161	.00867	.000520	.0000280	.160	.00864	10.5					1600.	1600.	1610.	1600.	1600.	1600.
M_{IV} .001716	.161	.00901	.000536	.0000300	.160	.00897	10.5					5030.	5030.	5030.	5030.	5030.	5030.
.002	.160	.0108	.000621	.0000418	.160	.0107	10.2					4660.	4660.	4660.	4660.	4660.	4660.
M_{III} .002108	.160	.0114	.000655	.0000466	.160	.0114	10.1					5300.	5300.	5300.	5300.	5300.	5300.
M_{II} .002364	.160	.0130	.000732	.0000594	.159	.0129	9.78					3540.	3540.	3540.	3540.	3540.	3540.
M_I .002600	.160	.0144	.000806	.0000725	.159	.0143	9.55					3100.	3100.	3110.	3100.	3100.	3100.
.003	.160	.0168	.000924	.0000972	.159	.0167	9.14					3580.	3580.	3580.	3580.	3580.	3580.
.004	.159	.0225	.00122	.000173	.158	.0223	8.20					2620.	2620.	2630.	2620.	2620.	2620.
.005	.159	.0278	.00152	.000267	.157	.0276	7.32					3110.	3110.	3120.	3110.	3110.	3110.
.006	.158	.0328	.00181	.000375	.156	.0324	6.55					2460.	2460.	2470.	2460.	2460.	2460.
.008	.157	.0415	.00237	.000628	.154	.0408	5.26					2900.	2900.	2910.	2900.	2900.	2900.
L_{III} .009560	.156	.0472	.00280	.0008 50	.153	.0462	4.52					1980.	1980.	1990.	1980.	1980.	1980.
.01	.156	.0489	.00292	.000918	.153	.0479	4.32					935.	935.	941.	935.	935.	935.
L_{II} .010739	.155	.0513	.00312	.00103	.152	.0503	4.02					520.	520.	526.	520.	520.	520.
L_I .011272	.155	.0530	.00326	.00111	.151	.0520	3.81					322.	322.	328.	322.	322.	322.
.015	.153	.0631	.00422	.00174	.148	.0614	2.77					148.	148.	154.	148.	148.	148.
.02	.150	.0742	.00540	.00268	.145	.0715	1.95					92.8	92.8	97.5	92.8	92.8	92.8
.03	.145	.0881	.00756	.00459	.138	.0833	1.14					262.	214.	267.	262.	262.	214.
.04	.141	.0958	.00938	.00638	.131	.0894	.742					231.	190.	236.	231.	231.	190.
.05	.136	.100	.0110	.00810	.126	.0921	.520					192.	160.	196.	192.	192.	160.
.06	.133	.103	.0125	.00962	.120	.0928	.388					265.	219.	269.	265.	265.	219.
K .065345	.131	.103	.0131	.0104	.117	.0928	.337					233.	195.	237.	233.	233.	195.
.08	.126	.104	.0147	.0122	.111	.0918	.237					271.	225.	274.	271.	271.	225.
.1	.120	.103	.0165	.0142	.103	.0891	.157					126.	110.	128.	126.	126.	110.
.15	.108	.0992	.0196	.0180	.0881	.0813	.0742					58.4	53.0	60.4	58.4	58.4	53.0
.2	.0989	.0935	.0214	.0202	.0773	.0732	.0428					19.7	18.5	20.9	19.8	19.7	18.5
.3	.0857	.0833	.0231	.0225	.0628	.0607	.0195					8.97	8.54	9.82	9.08	8.97	8.54
.4	.0769	.0752	.0238	.0230	.0530	.0523	.0110					4.86	4.69	5.47	4.96	4.86	4.69
.5	.0702	.0692	.0240	.0232	.0462	.0459	.00715					2.88	2.79	3.37	2.99	2.90	2.80
.6	.0651	.0644	.0239	.0233	.0412	.0412	.00496					2.27	2.21	2.72	2.38	2.29	2.22
.8	.0570	.0567	.0233	.0226	.0337	.0341	.00283					11.9	3.78	12.3	12.0	11.9	3.78
1.	.0513	.0509	.0226	.0213	.0287	.0297	.00181					6.92	3.06	7.25	7.02	6.92	3.07
1.5	.0418	.0415	.0206	.0196	.0211	.0219	.000817	.00128		.00128	.000388	3.81	2.11	4.08	3.91	3.81	2.13
2.	.0354	.0354	.0189	.0177	.0167	.0177	.000459	.00418		.00418	.00192	1.30	.911	1.47	1.40	1.32	.928
3.	.0280	.0279	.0161	.0145	.0118	.0134	.000206	.00995	.00000978	.00995	.00604	.597	.462	.732	.692	.617	.482
4.	.0234	.0234	.0142	.0124	.00918	.0110	.000116	.0150	.0000402	.0150	.0101	.203	.173	.306	.286	.226	.195
5.	.0202	.0202	.0127	.0107	.00752	.00945	.0000759	.0191	.0000786	.0192	.0135	.0958	.0859	.182	.171	.120	.108
6.	.0178	.0178	.0115	.00941	.00634	.00843	.0000526	.0225	.000122	.0226	.0162	.0557	.0506	.132	.125	.0796	.0739
8.	.0146	.0146	.00975	.00756	.00486	.00702	.0000300	.0279	.000206	.0281	.0203	.0358	.0331	.105	.100	.0597	.0561
10.	.0124	.0124	.00850	.00621	.00395	.00621	.0000193	.0329	.000284	.0332	.0240	.0186	.0175	.0779	.0752	.0418	.0402
15.	.00921	.00921	.00655	.00452	.00267	.00469	.0000077	.0422	.000439	.0425	.0291	.0118	.0112	.0644	.0628	.0344	.0325
20.	.00739	.00739	.00536	.00341	.00202	.00398	.0000039	.0489	.000557	.0496	.0315	.00560	.00543	.0493	.0482	.0275	.0254
30.	.00536	.00536	.00402	.00217	.00136	.00319		.0587	.000719	.0594	.0337	.00337	.00330	.0435	.0428	.0264	.0229
40.	.00428	.00428	.00325	.00155	.00103	.00273		.0655	.000840	.0661	.0337	.00182	.00179	.0398	.0398	.0279	.0224
50.	.00358	.00358	.00275	.00118	.00082	.00240		.0702	.000931	.0712	.0331	.00121	.00120	.0398	.0395	.0304	.0237
60.	.00307	.00307	.00238	.000921	.000688	.00215		.0742	.000999	.0752	.0327	.000908	.000901	.0405	.0402	.0328	.0251
80.	.00242	.00242	.00191	.000624	.000516	.00180		.0796	.00111	.0806	.0315	.000715	.000709	.0412	.0412	.0348	.0263
100.	.00201	.00201	.00160	.000459	.000415	.00155		.0840	.00119	.0854	.0302	.000493	.0004R9	.0432	.0432	.0385	.0284
												.000378	.000378	.0459	.0459	.0422	.0305
												.000234	.000234	.0520	.0520	.0493	.0337
												.000169	.000168	.0570	.0570	.0550	.0351
												.000108	.000108	.0648	.0648	.0634	.0361
												.0000793	.0000793	.0705	.0705	.0695	.0354
												.0000621	.0000621	.0749	.0749	.0739	.0344
												.0000509	.0000509	.0783	.0783	.0776	.0334
												.0000371	.0000371	.0830	.0830	.0827	.0322
												.0000294	.0000296	.0874	.0874	.0870	.0306

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(barns/atom)

E (MeV)	$\sigma^{KN}_{inc,t}$	$\sigma^{BD}_{inc,t}$	$\sigma^{KN}_{inc,a}$	$\sigma^{BD}_{inc,a}$	$\sigma^{KN}_{inc,s}$	$\sigma^{BD}_{inc,s}$	σ_{coh}	$\sigma_{n,n}$	$\sigma_{n,e}$	$\sigma_{n,t}$	$\sigma_{n,a}$	$\sigma_{r,t}$	$\sigma_{r,a}$	$\sigma_{tot,t}$	$\sigma_{tot,t-coh}$	$\sigma_{tot,a}$	$\sigma_{tot,en}$
.001	48.4	1.33	.0942	.00259	48.3	1.33	3390.					1490000.	1490000.	1490000.	1490000.	1490000.	1490000.
.0015	48.3	2.27	.141	.00662	48.1	2.26	3250.					618000.	618000.	621000.	618000.	618000.	618000.
M_V .001735	48.2	2.71	.163	.00913	48.1	2.70	3180.					452000.	452000.	455000.	452000.	452000.	452000.
M_{IV} .001793	48.2	2.81	.168	.00978	48.1	2.80	3160.					1410000.	1410000.	1410000.	1410000.	1410000.	1410000.
.002	48.2	3.19	.187	.0124	48.0	3.18	3100.					1320000.	1320000.	1320000.	1320000.	1320000.	1320000.
M_{III} .002194	48.1	3.54	.205	.0151	47.9	3.52	3040.					1490000.	1490000.	1490000.	1490000.	1490000.	1490000.
M_{II} .002469	48.1	4.04	.230	.0193	47.9	4.02	2950.					1110000.	1110000.	1110000.	1110000.	1110000.	1110000.
M_I .002709	48.0	4.46	.252	.0234	47.8	4.44	2880.					879000.	879000.	882000.	879000.	879000.	879000.
.003	48.0	4.97	.278	.0288	47.7	4.94	2790.					1010000.	1010000.	1010000.	1010000.	1010000.	1010000.
.004	47.8	6.67	.368	.0513	47.4	6.62	2500.					738000.	738000.	741000.	738000.	738000.	738000.
.005	47.6	8.27	.456	.0792	47.2	8.19	2230.					878000.	878000.	881000.	878000.	878000.	878000.
.006	47.4	9.75	.543	.112	46.9	9.64	2000.					696000.	696000.	699000.	696000.	696000.	696000.
.008	47.1	12.4	.713	.188	46.4	12.2	1610.					817000.	817000.	820000.	817000.	817000.	817000.
L_{III} .009880	46.8	14.5	.867	.269	45.9	14.2	1340.					623000.	623000.	626000.	623000.	623000.	623000.
.01	46.7	14.6	.876	.274	45.9	14.3	1320.					292000.	292000.	295000.	292000.	292000.	292000.
L_{II} .011136	46.6	15.7	.968	.327	45.6	15.4	1190.					163000.	163000.	166000.	163000.	163000.	163000.
L_I .011680	46.5	16.2	1.01	.353	45.5	15.8	1130.					100000.	100000.	102000.	100000.	100000.	100000.
.015	45.9	18.9	1.27	.523	44.6	18.4	850.					46600.	46600.	48200.	46600.	46600.	46600.
.02	45.1	22.1	1.63	.798	43.5	21.3	596.					26700.	26700.	28100.	26700.	26700.	26700.
.03	43.6	26.3	2.27	1.37	41.4	24.9	349.					74800.	60600.	76200.	74800.	74800.	60600.
.04	42.2	28.7	2.82	1.91	39.4	26.8	228.					72400.	58800.	73700.	72400.	72400.	58800.
.05	41.0	30.0	3.31	2.42	37.7	27.6	160.					54400.	45300.	55600.	54400.	54400.	45300.
.06	39.8	30.7	3.74	2.88	36.1	27.8	119.					75200.	62000.	76400.	75200.	75200.	62000.
K .067416	39.0	31.0	4.01	3.18	35.0	27.8	98.5					66300.	55200.	67400.	66300.	66300.	55200.
.08	37.8	31.2	4.42	3.65	33.3	27.5	72.8					76800.	63800.	77900.	76800.	76800.	63800.
.1	36.0	31.0	4.96	4.28	31.0	26.7	48.3					39100.	33900.	40000.	39100.	39100.	33900.
.15	32.4	29.8	5.88	5.41	26.5	24.4	22.8					18300.	16500.	18900.	18300.	18300.	16500.
.2	29.7	28.1	6.41	6.08	23.3	22.0	13.2					6140.	5730.	6520.	6170.	6140.	5730.
.3	25.8	25.0	6.96	6.74	18.8	18.3	6.00					2830.	2690.	3090.	2840.	2830.	2690.
.4	23.1	22.7	7.16	6.95	16.0	15.8	3.39					1530.	1470.	1720.	1560.	1530.	1470.
.5	21.1	20.8	7.20	6.99	13.9	13.8	2.20					919.	889.	1070.	950.	923.	892.
.6	19.5	19.3	7.18	6.97	12.4	12.3	1.52					656.	637.	786.	687.	660.	640.
.8	17.1	17.0	7.01	6.77	10.1	10.2	.885					3410.	1080.	3540.	3440.	3410.	1080.
1.	15.4	15.3	6.78	6.40	8.64	8.90	.557					2160.	916.	2260.	2190.	2160.	920.
1.5	12.5	12.5	6.20	5.90	6.33	6.60	.250	.393		.393	.119	1190.	642.	1270.	1220.	1190.	646.
2.	10.7	10.7	5.67	5.34	5.01	5.36	.141	1.28		1.28	.588	404.	280.	457.	434.	410.	285.
3.	8.40	8.39	4.85	4.36	3.55	4.03	.0630	3.03	.00294	3.03	1.84	187.	144.	228.	215.	193.	150.
4.	7.02	7.02	4.26	3.72	2.76	3.30	.0357	4.56	.0121	4.57	3.06	63.9	54.1	94.9	88.9	70.9	60.8
5.	6.06	6.06	3.81	3.21	2.26	2.85	.0233	5.82	.0237	5.84	4.10	30.1	26.6	56.2	52.8	37.3	33.5
6.	5.36	5.36	3.45	2.82	1.91	2.54	.0162	6.82	.0367	6.86	4.90	17.5	15.9	40.5	38.3	24.7	22.9
8.	4.38	4.38	2.93	2.26	1.46	2.12	.00920	8.46	.0620	8.52	6.17	11.2	10.3	32.0	30.5	18.4	17.3
10.	3.73	3.73	2.55	1.87	1.18	1.87	.00593	9.99	.0852	10.1	7.25	5.85	5.51	23.7	22.8	12.9	12.3
15.	2.76	2.76	1.96	1.35	.802	1.41	.00239	12.8	.132	12.9	8.75	3.70	3.53	19.6	19.0	10.5	9.93
20.	2.22	2.22	1.61	1.02	.607	1.20	.00118	14.9	.167	15.1	9.54	1.76	1.71	14.9	14.7	8.35	7.73
30.	1.61	1.61	1.21	.649	.408	.961		17.8	.216	18.0	10.2	1.06	1.04	13.2	13.0	8.01	6.97
40.	1.28	1.28	.975	.462	.308	.818		19.9	.252	20.2	10.2	.572	.563	12.1	12.0	8.45	6.76
50.	1.07	1.07	.825	.352	.247	.718		21.4	.280	21.7	10.0	.380	.376	12.0	12.0	9.21	7.16
60.	.923	.923	.716	.275	.207	.648		22.6	.300	22.9	9.89	.283	.280	12.2	12.2	9.93	7.59
80.	.728	.728	.572	.187	.155	.541		24.3	.333	24.6	9.56	.223	.221	12.5	12.4	10.5	7.94
100.	.604	.604	.480	.137	.125	.467		25.5	.357	25.9	9.10	.155	.154	13.1	13.1	11.6	8.58
												.118	.117	14.0	13.9	12.8	9.24
												.0734	.0737	15.7	15.7	14.9	10.2
												.0531	.0530	17.4	17.4	16.8	10.6
												.0341	.0340	19.6	19.6	19.2	10.9
												.0249	.0249	21.5	21.5	21.2	10.7
												.0195	.0195	22.8	22.8	22.5	10.4
												.0160	.0160	23.8	23.8	23.6	10.2
												.0117	.0117	25.3	25.3	25.2	9.76
												.00920	.00920	26.5	26.5	26.4	9.25

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(cm^2/g = 0.003328 x barns/atom)

E (MeV)	$(\frac{\mu}{\rho})^{KN}_{inc,t}$	$(\frac{\mu}{\rho})^{BD}_{inc,t}$	$(\frac{\mu}{\rho})^{KN}_{inc,a}$	$(\frac{\mu}{\rho})^{BD}_{inc,a}$	$(\frac{\mu}{\rho})^{KN}_{inc,s}$	$(\frac{\mu}{\rho})^{BD}_{inc,s}$	$(\frac{\mu}{\rho})_{coh}$	$(\frac{\mu}{\rho})_{\kappa_n}$	$(\frac{\mu}{\rho})_{\kappa_e}$	$(\frac{\mu}{\rho})_{\kappa,t}$	$(\frac{\mu}{\rho})_{\kappa,u}$	$(\frac{\mu}{\rho})_{\tau,t}$	$(\frac{\mu}{\rho})_{\tau,a}$	$(\frac{\mu}{\rho})_{tot,t}$	$(\frac{\mu}{\rho})_{tot,t-coh}$	$(\frac{\mu}{\rho})_{tot,a}$	$(\frac{\mu}{\rho})_{tot,en}$
.001	.161	.00443	.000313	.0000086	.161	.00443	11.3					4960.	4960.	4960.	4960.	4960.	4960.
.0015	.161	.00755	.000469	.0000220	.160	.00752	10.8					2060.	2060.	2070.	2060.	2060.	2060.
.001735	.160	.00902	.000542	.0000304	.160	.00899	10.6					1500.	1500.	1510.	1500.	1500.	1500.
.001793	.160	.00935	.000559	.0000325	.160	.00932	10.5					4690.	4690.	4690.	4690.	4690.	4690.
.002	.160	.0106	.000622	.0000413	.160	.0106	10.3					4390.	4390.	4390.	4390.	4390.	4390.
.002194	.160	.0118	.000682	.0000503	.159	.0117	10.1					4960.	4960.	4960.	4960.	4960.	4960.
.002469	.160	.0134	.000765	.0000642	.159	.0134	9.82					3690.	3690.	3690.	3690.	3690.	3690.
.002709	.160	.0148	.000839	.0000779	.159	.0148	9.58					2930.	2930.	2940.	2930.	2930.	2930.
.003	.160	.0165	.000925	.0000958	.159	.0164	9.29					3360.	3360.	3360.	3360.	3360.	3360.
.004	.159	.0222	.00122	.000171	.158	.0220	8.32					2460.	2460.	2470.	2460.	2460.	2460.
.005	.158	.0275	.00152	.000264	.157	.0273	7.42					2920.	2920.	2930.	2920.	2920.	2920.
.006	.158	.0324	.00181	.000373	.156	.0321	6.66					2320.	2320.	2330.	2320.	2320.	2320.
.008	.157	.0413	.00237	.000626	.154	.0406	5.36					2720.	2720.	2730.	2720.	2720.	2720.
.00988	.156	.0483	.00289	.000895	.153	.0473	4.46					2070.	2070.	2080.	2070.	2070.	2070.
.01	.155	.0486	.00292	.000912	.153	.0476	4.39					972.	972.	982.	972.	972.	972.
.011136	.155	.0522	.00322	.00109	.152	.0513	3.96					542.	542.	549.	542.	542.	542.
.01168	.155	.0539	.00336	.00117	.151	.0526	3.76					333.	333.	339.	333.	333.	333.
.015	.153	.0629	.00423	.00174	.148	.0612	2.83					155.	155.	160.	155.	155.	155.
.02	.150	.0735	.00542	.00266	.145	.0709	1.98					88.9	88.9	93.5	88.9	88.9	88.9
.03	.145	.0875	.00755	.00456	.138	.0829	1.16					249.	202.	254.	249.	249.	202.
.04	.140	.0955	.00938	.00636	.131	.0892	.759					241.	196.	245.	241.	241.	196.
.05	.136	.0998	.0110	.00805	.125	.0919	.532					181.	151.	185.	181.	181.	151.
.06	.132	.102	.0124	.00958	.120	.0925	.396					250.	206.	254.	250.	250.	206.
.067416	.130	.103	.0133	.0106	.116	.0925	.328					221.	184.	224.	221.	221.	184.
.08	.126	.104	.0147	.0121	.111	.0915	.242					256.	212.	259.	256.	256.	212.
.1	.120	.103	.0165	.0142	.103	.0889	.161					130.	113.	133.	130.	130.	113.
.15	.108	.0992	.0196	.0180	.0882	.0812	.0759					60.9	54.9	62.9	60.9	60.9	54.9
.2	.0988	.0935	.0213	.0202	.0775	.0732	.0439					20.4	19.1	21.7	20.5	20.4	19.1
.3	.0859	.0832	.0232	.0224	.0626	.0609	.0200					9.42	8.95	10.3	9.52	9.42	8.95
.4	.0769	.0755	.0238	.0231	.0532	.0526	.0113					5.09	4.89	5.72	5.19	5.09	4.89
.5	.0702	.0692	.0240	.0233	.0463	.0459	.00732					3.06	2.96	3.56	3.16	3.07	2.97
.6	.0649	.0642	.0239	.0232	.0413	.0409	.00506					2.18	2.12	2.62	2.29	2.20	2.13
.8	.0569	.0566	.0233	.0225	.0336	.0339	.00288					11.3	3.59	11.8	11.4	11.3	3.59
1.	.0513	.0509	.0226	.0213	.0288	.0296	.00185					7.19	3.05	7.52	7.29	7.19	3.06
1.5	.0416	.0416	.0206	.0196	.0211	.0220	.000832	.00131		.00131	.000396	3.96	2.14	4.23	4.06	3.96	2.15
2.	.0356	.0356	.0189	.0178	.0167	.0178	.000469	.00426		.00426	.00196	1.34	.932	1.52	1.44	1.36	.948
3.	.0280	.0279	.0161	.0145	.0118	.0134	.000210	.0101	.00000978	.0101	.00612	.622	.479	.759	.716	.642	.499
4.	.0234	.0234	.0142	.0124	.00919	.0110	.000119	.0152	.0000403	.0152	.0102	.213	.180	.316	.296	.236	.202
5.	.0202	.0202	.0127	.0107	.00752	.00948	.0000775	.0194	.0000789	.0194	.0136	.100	.0885	.187	.176	.124	.111
6.	.0178	.0178	.0115	.00938	.00636	.00845	.0000539	.0227	.000122	.0228	.0163	.0582	.0529	.135	.127	.0822	.0762
8.	.0146	.0146	.00975	.00752	.00486	.00706	.0000306	.0282	.000206	.0284	.0205	.0373	.0343	.106	.102	.0612	.0576
10.	.0124	.0124	.00849	.00622	.00393	.00622	.0000197	.0332	.000284	.0336	.0241	.0195	.0183	.0789	.0759	.0429	.0409
15.	.00919	.00919	.00652	.00449	.00267	.00469	.0000080	.0426	.000439	.0429	.0291	.0123	.0117	.0652	.0632	.0349	.0330
20.	.00739	.00739	.00536	.00339	.00202	.00399	.0000039	.0496	.000556	.0503	.0317	.00586	.00569	.0496	.0489	.0278	.0257
30.	.00536	.00536	.00403	.00216	.00136	.00320		.0592	.000719	.0599	.0339	.00353	.00346	.0430	.0433	.0267	.0232
40.	.00426	.00426	.00324	.00154	.00103	.00272		.0662	.000839	.0672	.0339	.00190	.00187	.0403	.0399	.0281	.0225
50.	.00356	.00356	.00275	.00117	.000822	.00239		.0712	.000932	.0722	.0333	.00126	.00125	.0399	.0399	.0307	.0238
60.	.00307	.00307	.00238	.000915	.000689	.00216		.0752	.000998	.0762	.0329	.000942	.000932	.0406	.0406	.0330	.0253
80.	.00242	.00242	.00190	.000622	.000516	.00180		.0809	.00111	.0819	.0318	.000742	.000735	.0416	.0413	.0349	.0264
100.	.00201	.00201	.00160	.000456	.000416	.00155		.0849	.00119	.0862	.0303	.000516	.000513	.0436	.0436	.0386	.0286
												.000393	.000389	.0466	.0463	.0426	.0308
												.000246	.000245	.0522	.0522	.0496	.0339
												.000177	.000176	.0579	.0579	.0559	.0353
												.000113	.000113	.0652	.0652	.0639	.0363
												.0000829	.0000829	.0716	.0716	.0706	.0356
												.0000649	.0000649	.0759	.0759	.0749	.0346
												.0000532	.0000532	.0792	.0792	.0785	.0339
												.0000389	.0000389	.0842	.0842	.0839	.0325
												.0000306	.0000306	.0882	.0882	.0879	.0308

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(barns/atom)

E (MeV)	$\sigma^{KN}_{inc,t}$	$\sigma^{BD}_{inc,t}$	$\sigma^{KN}_{inc,a}$	$\sigma^{BD}_{inc,a}$	$\sigma^{KN}_{inc,s}$	$\sigma^{BD}_{inc,s}$	σ_{coh}	$\sigma_{\kappa n}$	$\sigma_{\kappa e}$	$\sigma_{\kappa,t}$	$\sigma_{\kappa,a}$	$\sigma_{\gamma,t}$	$\sigma_{\gamma,a}$	$\sigma_{tot,t}$	$\sigma_{tot,t-coh}$	$\sigma_{tot,a}$	$\sigma_{tot,en}$
.001	49.0	1.31	.0955	.00255	48.9	1.31	3480.					1560000.	1560000.	1560000.	1560000.	1560000.	1560000.
.0015	48.9	2.27	.143	.00662	48.8	2.26	3350.					646000.	646000.	649000.	646000.	646000.	646000.
K_V .001809	48.9	2.84	.172	.00998	48.7	2.83	3250.					431000.	431000.	434000.	431000.	431000.	431000.
												1350000.	1350000.	1350000.	1350000.	1350000.	1350000.
K_{IV} .001871	48.9	2.96	.177	.0108	48.7	2.95	3230.					1250000.	1250000.	1250000.	1250000.	1250000.	1250000.
												1420000.	1420000.	1420000.	1420000.	1420000.	1420000.
.002	48.8	3.19	.190	.0124	48.6	3.18	3190.					1180000.	1180000.	1180000.	1180000.	1180000.	1180000.
K_{III} .002281	48.8	3.70	.216	.0164	48.6	3.68	3100.					842000.	842000.	845000.	842000.	842000.	842000.
												969000.	969000.	972000.	969000.	969000.	969000.
K_{II} .002575	48.7	4.23	.243	.0211	48.5	4.21	3000.					703000.	703000.	706000.	703000.	703000.	703000.
												837000.	837000.	840000.	837000.	837000.	837000.
K_I .002820	48.7	4.66	.265	.0254	48.4	4.63	2930.					665000.	665000.	668000.	665000.	665000.	665000.
												779000.	779000.	782000.	779000.	779000.	779000.
.003	48.7	4.97	.282	.0288	48.4	4.94	2870.					660000.	660000.	663000.	660000.	660000.	660000.
.004	48.5	6.67	.373	.0513	48.1	6.62	2570.					310000.	310000.	313000.	310000.	310000.	310000.
.005	48.3	8.28	.462	.0793	47.8	8.20	2290.					173000.	173000.	175000.	173000.	173000.	173000.
.006	48.1	9.79	.551	.112	47.6	9.68	2050.					106000.	106000.	108000.	106000.	106000.	106000.
.008	47.7	12.5	.723	.189	47.0	12.3	1660.					49300.	49300.	51000.	49300.	49300.	49300.
.01	47.4	14.7	.888	.275	46.5	14.4	1360.					27100.	27100.	28500.	27100.	27100.	27100.
L_{III} .010204	47.4	14.9	.906	.285	46.4	14.6	1340.					25900.	25900.	27300.	25900.	25900.	25900.
												72100.	56100.	73500.	72100.	72100.	56100.
L_{II} .011541	47.1	16.2	1.01	.349	46.1	15.9	1180.					52100.	41900.	53300.	52100.	52100.	41900.
												71900.	57000.	73100.	71900.	71900.	57000.
L_I .012098	47.0	16.7	1.06	.376	46.0	16.3	1120.					63500.	51000.	64600.	63500.	63500.	51000.
												73600.	58900.	74700.	73600.	73600.	58900.
.015	46.5	19.1	1.29	.528	45.3	18.6	880.					41300.	34700.	42200.	41300.	41300.	34700.
.02	45.7	22.3	1.65	.805	44.1	21.5	617.					19300.	17000.	19900.	19300.	19300.	17000.
.03	44.2	26.6	2.30	1.38	41.9	25.2	361.					6510.	5990.	6900.	6540.	6510.	5990.
.04	42.8	29.0	2.86	1.93	40.0	27.1	236.					2980.	2800.	3250.	3010.	2980.	2800.
.05	41.5	30.3	3.35	2.44	38.2	27.9	166.					1610.	1530.	1810.	1640.	1610.	1530.
.06	40.4	31.1	3.79	2.92	36.6	28.2	123.					965.	926.	1120.	996.	969.	929.
K .069525	39.3	31.4	4.14	3.30	35.2	28.1	96.9					639.	617.	767.	670.	643.	620.
												3290.	1040.	3420.	3320.	3290.	1040.
.08	38.3	31.5	4.48	3.69	33.8	27.8	75.4					2270.	920.	2380.	2300.	2270.	924.
.1	36.5	31.3	5.03	4.32	31.4	27.0	50.0					1250.	655.	1330.	1280.	1260.	659.
.15	32.8	30.2	5.98	5.48	26.9	24.7	23.6					427.	292.	481.	457.	433.	297.
.2	30.1	28.4	6.59	6.14	23.6	22.3	13.6					197.	150.	239.	225.	204.	156.
.3	26.2	25.3	7.05	6.82	19.1	18.5	6.21					67.1	56.5	98.6	92.4	74.1	63.3
.4	23.4	23.0	7.26	7.04	16.2	16.0	3.51					31.9	28.1	58.4	54.9	39.2	35.1
.5	21.4	21.1	7.30	7.09	14.1	14.0	2.28					18.5	16.7	41.9	39.6	25.8	23.8
.6	19.8	19.6	7.27	7.08	12.5	12.5	1.58					11.9	11.0	33.1	31.5	19.2	18.1
.8	17.4	17.3	7.11	6.89	10.3	10.4	.897					6.22	5.85	24.4	23.5	13.3	12.7
1.	15.6	15.5	6.87	6.68	8.75	9.02	.576					3.92	3.73	20.0	19.4	10.8	10.2
1.5	12.7	12.7	6.28	5.98	6.42	6.72	.260	.410		.410	.124	1.87	1.81	15.2	15.0	8.56	7.91
2.	10.8	10.8	5.75	5.38	5.08	5.42	.147	1.33		1.33	.610	1.13	1.10	13.4	13.3	8.21	7.09
3.	8.52	8.51	4.91	4.43	3.60	4.08	.0653	3.14	.00297	3.14	1.91	.610	.600	12.3	12.3	8.66	6.94
4.	7.12	7.12	4.32	3.77	2.80	3.35	.0370	4.70	.0122	4.71	3.15	.406	.401	12.3	12.2	9.44	7.32
5.	6.15	6.15	3.86	3.25	2.29	2.90	.0241	6.00	.0240	6.02	4.22	.300	.297	12.5	12.5	10.2	7.77
6.	5.43	5.43	3.50	2.85	1.93	2.58	.0167	7.01	.0372	7.05	5.04	.237	.235	12.7	12.7	10.8	8.12
8.	4.44	4.44	2.97	2.28	1.48	2.16	.00951	8.70	.0627	8.76	6.34	.165	.164	13.4	13.4	11.9	8.78
10.	3.79	3.79	2.59	1.89	1.20	1.90	.00615	10.2	.0864	10.3	7.38	.125	.124	14.2	14.2	13.0	9.39
15.	2.80	2.80	1.99	1.36	.813	1.44	.00250	13.1	.134	13.2	8.95	.0775	.0773	16.1	16.1	15.3	10.4
20.	2.25	2.25	1.63	1.03	.615	1.22	.00121	15.3	.169	15.5	9.73	.0560	.0559	17.8	17.8	17.2	10.8
30.	1.64	1.64	1.22	.659	.414	.981		18.2	.219	18.4	10.4	.0361	.0360	20.1	20.1	19.7	11.1
40.	1.30	1.30	.989	.468	.312	.832		20.4	.256	20.7	10.4	.0263	.0263	22.0	22.0	21.7	10.9
50.	1.09	1.09	.836	.356	.250	.734		22.0	.283	22.3	10.3	.0207	.0207	23.4	23.4	23.2	10.7
60.	.935	.935	.726	.278	.209	.657		23.1	.304	23.4	10.0	.0169	.0169	24.4	24.4	24.1	10.3
80.	.738	.738	.580	.189	.158	.549		24.9	.337	25.2	9.74	.0124	.0124	26.0	26.0	25.8	9.94
100.	.613	.613	.486	.139	.126	.474		26.2	.362	26.6	9.27	.00978	.00978	27.2	27.2	27.1	9.42

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(cm^2/g = 0.003276 x barns/atom)

E (MeV)	$(\frac{\mu}{\rho})^{KN}_{inc,t}$	$(\frac{\mu}{\rho})^{BD}_{inc,t}$	$(\frac{\mu}{\rho})^{KN}_{inc,a}$	$(\frac{\mu}{\rho})^{BD}_{inc,a}$	$(\frac{\mu}{\rho})^{KN}_{inc,s}$	$(\frac{\mu}{\rho})^{BD}_{inc,s}$	$(\frac{\mu}{\rho})_{coh}$	$(\frac{\mu}{\rho})_{\kappa_n}$	$(\frac{\mu}{\rho})_{\kappa_e}$	$(\frac{\mu}{\rho})_{\kappa,t}$	$(\frac{\mu}{\rho})_{\kappa,a}$	$(\frac{\mu}{\rho})_{\tau,t}$	$(\frac{\mu}{\rho})_{\tau,a}$	$(\frac{\mu}{\rho})_{tot,t}$	$(\frac{\mu}{\rho})_{tot,t-corr.}$	$(\frac{\mu}{\rho})_{tot,a}$	$(\frac{\mu}{\rho})_{tot,en.}$
.001	.161	.00429	.000313	.0000084	.160	.00429	11.4					5110.	5110.	5110.	5110.	5110.	5110.
.0015	.160	.00744	.000468	.0000217	.160	.00740	11.0					2120.	2120.	2130.	2120.	2120.	2120.
M_V .001809	.160	.00930	.000563	.0000327	.160	.00927	10.6					1410.	1410.	1420.	1410.	1410.	1410.
M_{IV} .001871	.160	.00970	.000580	.0000354	.160	.00966	10.6					4420.	4420.	4420.	4420.	4420.	4420.
.002	.160	.0105	.000622	.0000406	.159	.0104	10.5					4100.	4100.	4100.	4100.	4100.	4100.
M_{III} .002281	.160	.0121	.000708	.0000537	.159	.0121	10.2					4650.	4650.	4650.	4650.	4650.	4650.
M_{II} .002575	.160	.0139	.000796	.0000691	.159	.0138	9.83					3870.	3870.	3870.	3870.	3870.	3870.
M_I .002820	.160	.0153	.000868	.0000832	.159	.0152	9.60					2760.	2760.	2770.	2760.	2760.	2760.
.003	.160	.0163	.000924	.0000943	.159	.0162	9.40					3170.	3170.	3180.	3170.	3170.	3170.
.004	.159	.0219	.00122	.000168	.158	.0217	8.42					2300.	2300.	2310.	2300.	2300.	2300.
.005	.158	.0271	.00151	.000260	.157	.0269	7.50					2740.	2740.	2750.	2740.	2740.	2740.
.006	.158	.0321	.00181	.000367	.156	.0317	6.72					2180.	2180.	2190.	2180.	2180.	2180.
.008	.156	.0409	.00237	.000619	.154	.0403	5.44					2550.	2550.	2560.	2550.	2550.	2550.
.01	.155	.0482	.00291	.000901	.152	.0472	4.46					2160.	2160.	2170.	2160.	2160.	2160.
L_{III} .010204	.155	.0488	.00297	.000934	.152	.0478	4.39					1020.	1020.	1030.	1020.	1020.	1020.
L_{II} .011541	.154	.0531	.00331	.00114	.151	.0521	3.87					567.	567.	573.	567.	567.	567.
L_I .012098	.154	.0547	.00347	.00123	.151	.0534	3.67					347.	347.	354.	347.	347.	347.
.015	.152	.0626	.00423	.00173	.148	.0609	2.88					162.	162.	167.	162.	162.	162.
.02	.150	.0731	.00541	.00264	.144	.0704	2.02					88.8	88.8	93.4	88.8	88.8	88.8
.03	.145	.0871	.00753	.00452	.137	.0826	1.18					84.8	84.8	89.4	84.8	84.8	84.8
.04	.140	.0950	.00937	.00632	.131	.0888	.773					236.	184.	241.	236.	236.	184.
.05	.136	.0993	.0110	.00799	.125	.0914	.544					171.	137.	175.	171.	171.	137.
.06	.132	.102	.0124	.00957	.120	.0924	.403					236.	187.	239.	236.	236.	187.
K .069525	.129	.103	.0136	.0108	.115	.0921	.317					208.	167.	212.	208.	208.	167.
.08	.125	.103	.0147	.0121	.111	.0911	.247					241.	193.	245.	241.	241.	193.
.1	.120	.103	.0165	.0142	.103	.0885	.164					135.	114.	138.	135.	135.	114.
.15	.107	.0989	.0195	.0180	.0881	.0809	.0773					63.2	55.7	65.2	63.2	63.2	55.7
.2	.0986	.0930	.0213	.0201	.0773	.0731	.0446					21.3	19.6	22.6	21.4	21.3	19.6
.3	.0858	.0829	.0231	.0223	.0626	.0606	.0203					9.76	9.17	10.6	9.86	9.76	9.17
.4	.0767	.0753	.0238	.0231	.0531	.0524	.0115					5.27	5.01	5.93	5.37	5.27	5.01
.5	.0701	.0691	.0239	.0232	.0462	.0459	.00747					3.16	3.03	3.67	3.26	3.17	3.04
.6	.0649	.0642	.0238	.0232	.0409	.0409	.00518					2.09	2.02	2.51	2.19	2.11	2.03
.8	.0570	.0567	.0233	.0226	.0337	.0341	.00294					10.8	3.41	11.2	10.9	10.8	3.41
1.	.0511	.0508	.0225	.0212	.0287	.0295	.00189					7.44	3.01	7.80	7.53	7.44	3.03
1.5	.0416	.0416	.0206	.0196	.0210	.0220	.000852	.00134		.00134	.000406	4.09	2.15	4.36	4.19	4.13	2.16
2.	.0354	.0354	.0188	.0176	.0166	.0178	.000482	.00436		.00436	.00200	1.40	.957	1.58	1.50	1.42	.973
3.	.0279	.0279	.0161	.0145	.0118	.0134	.000214	.0103	.00000973	.0103	.00626	.645	.491	.783	.737	.668	.511
4.	.0233	.0233	.0142	.0124	.00917	.0110	.000121	.0154	.0000400	.0154	.0103	.220	.185	.323	.303	.243	.207
5.	.0201	.0201	.0126	.0106	.00750	.00950	.0000790	.0197	.0000786	.0197	.0138	.105	.0921	.191	.180	.128	.115
6.	.0178	.0178	.0115	.00934	.00632	.00845	.0000547	.0230	.000122	.0231	.0165	.0606	.0547	.137	.130	.0845	.0780
8.	.0145	.0145	.00973	.00747	.00485	.00708	.0000312	.0285	.000205	.0287	.0208	.0390	.0360	.108	.103	.0629	.0593
10.	.0124	.0124	.00848	.00619	.00393	.00622	.0000201	.0334	.000283	.0337	.0242	.0284	.0192	.0799	.0770	.0436	.0416
15.	.00917	.00917	.00652	.00446	.00266	.00472	.0000082	.0429	.000439	.0432	.0293	.0128	.0122	.0655	.0636	.0354	.0334
20.	.00737	.00737	.00534	.00337	.00201	.00400	.0000040	.0501	.000554	.0508	.0319	.00613	.00593	.0498	.0491	.0280	.0259
30.	.00537	.00537	.00400	.00216	.00136	.00321		.0596	.000717	.0603	.0341	.00370	.00360	.0439	.0436	.0269	.0252
40.	.00426	.00426	.00324	.00153	.00102	.00273		.0668	.000839	.0678	.0341	.00200	.00197	.0403	.0403	.0284	.0227
50.	.00357	.00357	.00274	.00117	.000819	.00240		.0721	.000927	.0731	.0337	.00133	.00131	.0403	.0400	.0309	.0240
60.	.00306	.00306	.00238	.000911	.000685	.00215		.0757	.000996	.0767	.0328	.000983	.000973	.0409	.0409	.0334	.0255
80.	.00242	.00242	.00190	.000619	.000518	.00180		.0816	.00110	.0826	.0319	.000776	.000770	.0416	.0416	.0354	.0266
100.	.00201	.00201	.00159	.000455	.000413	.00155		.0858	.00119	.0871	.0304	.000541	.000537	.0439	.0439	.0390	.0288
												.000410	.000406	.0465	.0465	.0426	.0308
												.000254	.000253	.0527	.0527	.0501	.0341
												.000183	.000183	.0583	.0583	.0563	.0354
												.000118	.000118	.0658	.0658	.0645	.0364
												.0000862	.0000862	.0721	.0721	.0711	.0357
												.0000678	.0000678	.0767	.0767	.0760	.0351
												.0000554	.0000554	.0799	.0799	.0790	.0337
												.0000406	.0000406	.0852	.0852	.0845	.0326
												.0000320	.0000320	.0891	.0891	.0888	.0309

75 RHENIUM
(barns/atom)

E (MeV)	$\sigma^{KN}_{inc,t}$	$\sigma^{BD}_{inc,t}$	$\sigma^{KN}_{inc,a}$	$\sigma^{BD}_{inc,a}$	$\sigma^{KN}_{inc,s}$	$\sigma^{BD}_{inc,s}$	σ_{coh}	$\sigma_{\kappa n}$	$\sigma_{\kappa e}$	$\sigma_{\kappa,t}$	$\sigma_{\kappa,a}$	$\sigma_{\gamma,t}$	$\sigma_{\gamma,a}$	$\sigma_{tot,t}$	$\sigma_{tot,t-coh}$	$\sigma_{tot,a}$	$\sigma_{tot,en}$
.001	49.7	1.30	.0968	.00253	49.6	1.30	3580.					1630000.	1630000.	1630000.	1630000.	1630000.	1630000.
.0015	49.6	2.27	.145	.00662	49.5	2.26	3440.					677000.	677000.	680000.	677000.	677000.	677000.
M_V .001883	49.5	2.98	.181	.0109	49.3	2.97	3320.					412000.	412000.	415000.	412000.	412000.	412000.
												1290000.	1290000.	1290000.	1290000.	1290000.	1290000.
M_{IV} .001950	49.5	3.11	.187	.0118	49.3	3.10	3300.					1190000.	1190000.	1190000.	1190000.	1190000.	1190000.
												1350000.	1350000.	1350000.	1350000.	1350000.	1350000.
.002	49.5	3.20	.192	.0124	49.3	3.19	3280.					1260000.	1260000.	1260000.	1260000.	1260000.	1260000.
M_{III} .002368	49.4	3.86	.227	.0177	49.2	3.84	3160.					808000.	808000.	811000.	808000.	808000.	808000.
												930000.	930000.	933000.	930000.	930000.	930000.
M_{II} .002682	49.4	4.42	.256	.0229	49.1	4.40	3050.					671000.	671000.	674000.	671000.	671000.	671000.
												799000.	799000.	802000.	799000.	799000.	799000.
M_I .002934	49.3	4.86	.280	.0276	49.0	4.83	2970.					636000.	636000.	639000.	636000.	636000.	636000.
												743000.	743000.	746000.	743000.	743000.	743000.
.003	49.3	4.97	.286	.0288	49.0	4.94	2950.					697000.	697000.	700000.	697000.	697000.	697000.
.004	49.1	6.68	.378	.0514	48.7	6.63	2640.					329000.	329000.	332000.	329000.	329000.	329000.
.005	48.9	8.30	.469	.0795	48.5	8.22	2360.					183000.	183000.	185000.	183000.	183000.	183000.
.006	48.7	9.82	.558	.112	48.2	9.71	2110.					113000.	113000.	115000.	113000.	113000.	113000.
.008	48.4	12.6	.732	.191	47.7	12.4	1710.					52400.	52400.	54100.	52400.	52400.	52400.
.01	48.0	14.8	.900	.277	47.1	14.5	1410.					28800.	28800.	30200.	28800.	28800.	28800.
L_{III} .010534	47.9	15.4	.945	.304	47.0	15.1	1340.					25200.	25200.	26600.	25200.	25200.	25200.
												69500.	52900.	70900.	69500.	69500.	52900.
L_{II} .011957	47.7	16.7	1.06	.372	46.6	16.3	1180.					49800.	39300.	51000.	49800.	49800.	39300.
												68800.	53600.	70000.	68800.	68800.	53600.
L_I .012528	47.6	17.2	1.11	.400	46.5	16.8	1120.					60800.	48000.	61900.	60800.	60800.	48000.
												70500.	55400.	71600.	70500.	70500.	55400.
.015	47.2	19.2	1.30	.531	45.9	18.7	910.					43500.	35700.	44400.	43500.	43500.	35700.
.02	46.3	22.5	1.67	.812	44.7	21.7	637.					20300.	17600.	21000.	20300.	20300.	17600.
.03	44.8	26.8	2.33	1.39	42.5	25.4	373.					6870.	6260.	7270.	6900.	6870.	6260.
.04	43.4	29.3	2.89	1.95	40.5	27.3	244.					3140.	2930.	3410.	3170.	3140.	2930.
.05	42.1	30.6	3.40	2.47	38.7	28.1	171.					1710.	1620.	1910.	1740.	1710.	1620.
.06	40.9	31.4	3.84	2.95	37.1	28.5	128.					1030.	984.	1190.	1060.	1030.	987.
K .071676	39.6	31.8	4.27	3.42	35.4	28.4	95.3					622.	599.	749.	654.	626.	602.
												3180.	1000.	3310.	3210.	3180.	1000.
.08	38.8	31.9	4.54	3.74	34.3	28.2	78.0					2380.	919.	2490.	2410.	2380.	923.
.1	37.0	31.7	5.10	4.37	31.9	27.3	51.7					1320.	672.	1400.	1350.	1330.	676.
.15	33.3	30.6	6.04	5.55	27.2	25.0	24.4					449.	302.	504.	480.	455.	308.
.2	30.5	28.8	6.59	6.23	23.9	22.6	14.1					287.	156.	250.	236.	214.	162.
.3	26.5	25.7	7.15	6.93	19.4	18.8	6.43					71.0	59.4	103.	96.7	78.1	66.3
.4	23.7	23.3	7.36	7.13	16.4	16.2	3.64					33.9	29.7	60.8	57.2	41.3	36.8
.5	21.7	21.4	7.40	7.19	14.3	14.2	2.36					19.5	17.6	43.3	40.9	26.9	24.8
.6	20.1	19.8	7.37	7.15	12.7	12.7	1.63					12.7	11.7	34.1	32.5	20.1	18.8
.8	17.6	17.5	7.20	6.96	10.4	10.5	.930					6.60	6.19	25.0	24.1	13.8	13.1
1.	15.8	15.8	6.97	6.59	8.87	9.21	.595					4.18	3.97	20.6	20.0	11.1	10.6
1.5	12.9	12.8	6.37	6.03	6.50	6.77	.269	.425		.425	.129	1.97	1.91	15.5	15.2	8.76	8.07
2.	11.0	11.0	5.82	5.48	5.15	5.52	.152	1.37		1.37	.629	1.20	1.17	13.7	13.6	8.39	7.28
3.	8.63	8.62	4.98	4.47	3.65	4.15	.0676	3.23	.00302	3.23	1.96	.649	.638	12.6	12.5	8.86	7.07
4.	7.21	7.21	4.38	3.81	2.84	3.40	.0383	4.83	.0124	4.84	3.23	.430	.425	12.5	12.5	9.65	7.47
5.	6.23	6.23	3.91	3.29	2.32	2.94	.0249	6.15	.0243	6.17	4.32	.320	.317	12.7	12.7	10.4	7.93
6.	5.51	5.51	3.55	2.89	1.96	2.62	.0173	7.20	.0377	7.24	5.17	.253	.251	13.0	13.0	11.0	8.31
8.	4.50	4.50	3.01	2.31	1.50	2.19	.00983	8.90	.0635	8.96	6.47	.175	.174	13.6	13.6	12.1	8.95
10.	3.84	3.84	2.62	1.91	1.21	1.93	.00638	10.5	.0877	10.6	7.58	.134	.133	14.6	14.6	13.4	9.62
15.	2.84	2.84	2.02	1.38	.823	1.46	.00261	13.4	.136	13.5	9.14	.0828	.0825	16.4	16.4	15.6	10.6
20.	2.28	2.28	1.66	1.04	.623	1.24	.00126	15.7	.171	15.9	9.95	.0604	.0603	18.2	18.2	17.6	11.1
30.	1.66	1.66	1.24	.666	.419	.994		18.7	.222	18.9	10.7	.0385	.0384	20.6	20.6	20.2	11.4
40.	1.32	1.32	1.00	.474	.316	.846		20.9	.259	21.2	10.6	.0280	.0280	22.5	22.5	22.2	11.1
50.	1.10	1.10	.847	.359	.253	.741		22.5	.286	22.8	10.4	.0219	.0219	23.9	23.9	23.7	10.8
60.	.948	.948	.736	.281	.212	.667		23.6	.308	23.9	10.2	.0179	.0179	24.9	24.9	24.7	10.5
80.	.748	.748	.588	.191	.160	.557		25.5	.341	25.8	9.92	.0130	.0130	26.6	26.6	26.4	10.1
100.	.621	.621	.493	.140	.128	.481		26.8	.366	27.2	9.43	.0103	.0103	27.8	27.8	27.7	9.58

75 RHENIUM

(cm²/g = 0.003234 x barns/atom)

E (MeV)	$(\mu/\rho)^{KN}_{inc,t}$	$(\mu/\rho)^{BD}_{inc,t}$	$(\mu/\rho)^{KN}_{inc,a}$	$(\mu/\rho)^{BD}_{inc,a}$	$(\mu/\rho)^{KN}_{inc,s}$	$(\mu/\rho)^{BD}_{inc,s}$	$(\mu/\rho)_{coh}$	$(\mu/\rho)_{x,n}$	$(\mu/\rho)_{x,e}$	$(\mu/\rho)_{x,t}$	$(\mu/\rho)_{x,a}$	$(\mu/\rho)_{\tau}$	$(\mu/\rho)_{\tau,a}$	$(\mu/\rho)_{tot,t}$	$(\mu/\rho)_{tot,t-coh}$	$(\mu/\rho)_{tot,a}$	$(\mu/\rho)_{tot,en}$
.001	.161	.00420	.000313	.0000082	.160	.00420	11.6					5270.	5270.	5280.	5270.	5270.	5270.
.0015	.160	.00734	.000469	.0000214	.160	.00731	11.1					2190.	2190.	2200.	2190.	2190.	2190.
M_V .001883	.160	.00964	.000585	.0000353	.159	.00960	10.7					1330.	1330.	1340.	1330.	1330.	1330.
												4170.	4170.	4180.	4170.	4170.	4170.
M_{IV} .001950	.160	.0101	.000605	.0000382	.159	.0100	10.7					3850.	3850.	3860.	3850.	3850.	3850.
												4370.	4370.	4380.	4370.	4370.	4370.
.002	.160	.0103	.000621	.0000401	.159	.0103	10.6					4070.	4070.	4080.	4070.	4070.	4070.
M_{III} .002368	.160	.0125	.000734	.0000572	.159	.0124	10.2					2610.	2610.	2620.	2610.	2610.	2610.
												3010.	3010.	3020.	3010.	3010.	3010.
M_{II} .002682	.160	.0143	.000828	.0000741	.159	.0142	9.80					2170.	2170.	2180.	2170.	2170.	2170.
												2580.	2580.	2590.	2580.	2580.	2580.
M_I .002934	.159	.0157	.000906	.0000893	.158	.0156	9.61					2060.	2060.	2070.	2060.	2060.	2060.
												2400.	2400.	2410.	2400.	2400.	2400.
.003	.159	.0161	.000925	.0000931	.158	.0160	9.54					2250.	2250.	2260.	2250.	2250.	2250.
.004	.159	.0216	.00122	.000166	.157	.0214	8.54					1060.	1060.	1070.	1060.	1060.	1060.
.005	.158	.0268	.00152	.000257	.157	.0266	7.63					592.	592.	598.	592.	592.	592.
.006	.157	.0318	.00180	.000362	.156	.0314	6.82					365.	365.	372.	365.	365.	365.
.008	.157	.0407	.00237	.000618	.154	.0401	5.53					169.	169.	175.	169.	169.	169.
.01	.155	.0479	.00291	.000896	.152	.0469	4.56					93.1	93.1	97.7	93.1	93.1	93.1
L_{III} .010534	.155	.0498	.00306	.000983	.152	.0488	4.33					81.5	81.5	86.0	81.5	81.5	81.5
												225.	171.	229.	225.	225.	171.
L_{II} .011957	.154	.0540	.00343	.00120	.151	.0527	3.82					181.	127.	185.	181.	181.	127.
												222.	173.	226.	222.	222.	173.
L_I .012528	.154	.0556	.00359	.00129	.150	.0543	3.62					197.	159.	200.	197.	197.	159.
												228.	179.	232.	228.	228.	179.
.015	.153	.0621	.00420	.00172	.148	.0605	2.94					141.	115.	144.	141.	141.	115.
.02	.150	.0728	.00540	.00263	.145	.0702	2.06					65.7	56.9	67.9	65.7	65.7	56.9
.03	.145	.0867	.00754	.00450	.137	.0821	1.21					22.2	20.2	23.5	22.3	22.2	20.2
.04	.140	.0948	.00935	.00631	.131	.0883	.789					10.2	9.48	11.0	10.3	10.2	9.48
.05	.136	.0990	.0110	.00799	.125	.0909	.553					5.53	5.24	6.18	5.63	5.53	5.24
.06	.132	.102	.0124	.00954	.120	.0922	.414					3.33	3.18	3.85	3.43	3.33	3.19
K .071676	.128	.103	.0138	.0110	.114	.0918	.308					2.01	1.94	2.42	2.12	2.02	1.95
												10.3	3.23	10.7	10.4	10.3	3.23
.08	.125	.103	.0147	.0121	.111	.0912	.252					7.70	2.97	8.05	7.79	7.70	2.98
.1	.120	.103	.0165	.0141	.103	.0883	.167					4.27	2.17	4.53	4.37	4.30	2.19
.15	.108	.0990	.0195	.0179	.0880	.0808	.0789					1.45	.977	1.63	1.55	1.47	.996
.2	.0986	.0931	.0213	.0201	.0773	.0731	.0456					.669	.505	.808	.763	.692	.524
.3	.0857	.0831	.0231	.0224	.0627	.0608	.0208					.230	.192	.333	.313	.253	.214
.4	.0766	.0754	.0236	.0231	.0530	.0524	.0118					.110	.0960	.197	.185	.134	.119
.5	.0702	.0692	.0239	.0233	.0462	.0459	.00763					.0631	.0569	.140	.132	.0870	.0802
.6	.0650	.0640	.0238	.0231	.0411	.0411	.00527					.0411	.0378	.110	.105	.0650	.0608
.8	.0569	.0566	.0233	.0225	.0336	.0340	.00301					.0213	.0200	.0808	.0779	.0446	.0424
1.	.0511	.0511	.0225	.0218	.0287	.0298	.00192					.0135	.0128	.0666	.0647	.0359	.0343
1.5	.0417	.0414	.0206	.0195	.0210	.0219	.000870	.00137		.00137	.000417	.00637	.00618	.0501	.0492	.0283	.0261
2.	.0356	.0356	.0188	.0177	.0167	.0179	.000492	.00443		.00443	.00203	.00388	.00378	.0443	.0440	.0271	.0235
3.	.0279	.0279	.0161	.0145	.0118	.0134	.000219	.0104	.00000977	.0104	.00634	.00210	.00206	.0407	.0404	.0287	.0229
4.	.0233	.0233	.0142	.0123	.00918	.0110	.000124	.0156	.0000401	.0157	.0104	.00139	.00137	.0404	.0404	.0312	.0242
5.	.0201	.0201	.0126	.0106	.00750	.00951	.0000805	.0199	.0000786	.0200	.0140	.00103	.00103	.0411	.0411	.0336	.0256
6.	.0178	.0178	.0115	.00935	.00634	.00847	.0000559	.0233	.000122	.0234	.0167	.000818	.000812	.0420	.0420	.0356	.0269
8.	.0146	.0146	.00983	.00747	.00485	.00708	.0000318	.0288	.000205	.0290	.0209	.000566	.000563	.0440	.0440	.0391	.0289
10.	.0124	.0124	.00847	.00618	.00391	.00624	.0000206	.0340	.000284	.0343	.0245	.000433	.000430	.0472	.0472	.0433	.0311
15.	.00918	.00918	.00653	.00446	.00266	.00472	.0000084	.0433	.000440	.0437	.0296	.000268	.000267	.0530	.0530	.0505	.0343
20.	.00737	.00737	.00537	.00336	.00201	.00401	.0000041	.0508	.000553	.0514	.0322	.000195	.000195	.0589	.0589	.0569	.0359
30.	.00537	.00537	.00401	.00218	.00136	.00321		.0605	.000718	.0611	.0346	.000125	.000124	.0666	.0666	.0653	.0369
40.	.00427	.00427	.00323	.00153	.00102	.00274		.0676	.000838	.0686	.0343	.0000906	.0000906	.0728	.0728	.0718	.0359
50.	.00356	.00356	.00274	.00116	.000818	.00240		.0728	.000925	.0737	.0336	.0000708	.0000708	.0773	.0773	.0766	.0349
60.	.00307	.00307	.00238	.000909	.000686	.00216		.0763	.000996	.0773	.0330	.0000579	.0000579	.0805	.0805	.0799	.0340
80.	.00242	.00242	.00190	.000618	.000517	.00180		.0825	.00110	.0834	.0321	.0000420	.0000420	.0860	.0860	.0854	.0327
100.	.00201	.00201	.00159	.000453	.000414	.00156		.0867	.00118	.0880	.0305	.0000333	.0000333	.0899	.0899	.0896	.0310

76 OSMIUM
(barns/atom)

E (MeV)	KN $\sigma_{inc,t}$	BD $\sigma_{inc,t}$	KN $\sigma_{inc,a}$	BD $\sigma_{inc,a}$	KN $\sigma_{inc,e}$	BD $\sigma_{inc,e}$	σ_{coh}	σ_{κ_n}	σ_{κ_e}	$\sigma_{\kappa,t}$	$\sigma_{\kappa,a}$	$\sigma_{\gamma,t}$	$\sigma_{\gamma,a}$	$\sigma_{tot,t}$	$\sigma_{tot,t-coh}$	$\sigma_{tot,a}$	$\sigma_{tot,en}$
.001	50.4	1.19	.0981	.00232	50.3	1.19	3680.					1710000.	1710000.	1710000.	1710000.	1710000.	1710000.
.0015	50.3	2.13	.147	.00621	50.1	2.12	3540.					704000.	704000.	708000.	704000.	704000.	704000.
K_V .001960	50.2	2.98	.191	.0113	50.0	2.97	3390.					393000.	393000.	396000.	393000.	393000.	393000.
												1230000.	1230000.	1230000.	1230000.	1230000.	1230000.
.002	50.2	3.06	.195	.0119	50.0	3.05	3370.					1180000.	1180000.	1180000.	1180000.	1180000.	1180000.
K_{IV} .002031	50.2	3.12	.198	.0123	50.0	3.11	3360.					1140000.	1140000.	1140000.	1140000.	1140000.	1140000.
												1290000.	1290000.	1290000.	1290000.	1290000.	1290000.
K_{III} .002457	50.1	3.9	.238	.0186	49.8	3.88	3220.					776000.	776000.	779000.	776000.	776000.	776000.
												893000.	893000.	896000.	893000.	893000.	893000.
K_{II} .002792	50.0	4.51	.270	.0243	49.7	4.49	3100.					641000.	641000.	644000.	641000.	641000.	641000.
												763000.	763000.	766000.	763000.	763000.	763000.
.003	50.0	4.88	.290	.0283	49.7	4.85	3030.					633000.	633000.	636000.	633000.	633000.	633000.
K_I .003052	50.0	4.97	.295	.0293	49.7	4.94	3020.					608000.	608000.	611000.	608000.	608000.	608000.
												709000.	709000.	712000.	709000.	709000.	709000.
.004	49.8	6.59	.383	.0507	49.4	6.54	2710.					348000.	348000.	351000.	348000.	348000.	348000.
.005	49.6	8.24	.475	.0789	49.1	8.16	2420.					194000.	194000.	196000.	194000.	194000.	194000.
.006	49.4	9.80	.565	.112	48.8	9.69	2170.					120000.	120000.	122000.	120000.	120000.	120000.
.008	49.0	12.6	.742	.191	48.3	12.4	1760.					55500.	55500.	57300.	55500.	55500.	55500.
.01	48.7	14.9	.912	.279	47.8	14.6	1450.					30500.	30500.	32000.	30500.	30500.	30500.
L_{III} .010871	48.5	15.8	.986	.321	47.5	15.5	1340.					24600.	24600.	26000.	24600.	24600.	24600.
												67000.	50200.	68400.	67000.	67000.	50200.
L_{II} .012385	48.2	17.3	1.11	.398	47.1	16.9	1170.					47700.	37200.	48900.	47700.	47700.	37200.
												65900.	50600.	67100.	65900.	65900.	50600.
L_I .012969	48.1	17.8	1.16	.428	47.0	17.4	1110.					58300.	45400.	59400.	58300.	58300.	45400.
												67600.	52500.	68700.	67600.	67600.	52500.
.015	47.8	19.4	1.32	.537	46.5	18.9	940.					45800.	36900.	46800.	45800.	45800.	36900.
.02	47.0	22.7	1.69	.819	45.3	21.9	658.					21400.	18300.	22100.	21400.	21400.	18300.
.03	45.4	27.1	2.36	1.41	43.1	25.7	385.					7240.	6540.	7650.	7270.	7240.	6540.
.04	44.0	29.6	2.93	1.97	41.0	27.6	252.					3330.	3090.	3610.	3360.	3330.	3090.
.05	42.7	31.0	3.44	2.58	39.2	28.5	177.					1810.	1700.	2020.	1840.	1810.	1700.
.06	41.5	31.8	3.89	2.98	37.6	28.8	132.					1090.	1040.	1250.	1120.	1090.	1040.
K .073871	39.9	32.2	4.40	3.55	35.5	28.7	93.8					606.	582.	732.	638.	610.	586.
												3070.	967.	3200.	3100.	3070.	971.
.08	39.3	32.2	4.60	3.77	34.7	28.4	80.7					2490.	915.	2600.	2520.	2490.	919.
.1	37.4	32.1	5.17	4.43	32.3	27.7	53.5					1380.	682.	1470.	1410.	1390.	686.
.15	33.7	31.0	6.12	5.63	27.6	25.4	25.2					472.	313.	528.	503.	478.	319.
.2	30.9	29.2	6.68	6.31	24.2	22.9	14.6					219.	164.	263.	248.	226.	170.
.3	26.9	26.0	7.24	7.01	19.6	19.0	6.65					75.0	62.3	108.	101.	82.2	69.3
.4	24.1	23.6	7.46	7.22	16.6	16.4	3.77					35.7	31.2	63.1	59.3	43.2	38.4
.5	22.0	21.6	7.50	7.28	14.5	14.3	2.44					20.7	18.6	44.7	42.3	28.2	25.9
.6	20.3	20.1	7.47	7.26	12.9	12.8	1.69					13.4	12.3	35.2	33.5	20.9	19.6
.8	17.9	17.7	7.30	7.04	10.6	10.7	.960					6.96	6.52	25.6	24.7	14.3	13.6
1.	16.1	16.0	7.06	6.67	8.99	9.33	.615					4.41	4.19	21.0	20.4	11.5	10.9
1.5	13.0	13.0	6.45	6.12	6.59	6.88	.278	.440		.440	.133	2.08	2.01	15.8	15.5	8.97	8.26
2.	11.1	11.1	5.90	5.53	5.22	5.57	.157	1.42		1.42	.852	1.28	1.25	14.0	13.8	8.60	7.43
3.	8.75	8.74	5.05	4.54	3.70	4.20	.0700	3.33	.00306	3.33	2.02	.692	.680	12.8	12.8	9.07	7.24
4.	7.31	7.31	4.44	3.85	2.87	3.46	.0396	4.97	.0126	4.98	3.32	.462	.456	12.8	12.8	9.88	7.63
5.	6.31	6.31	3.96	3.33	2.35	2.98	.0258	6.30	.0247	6.32	4.42	.340	.337	13.0	13.0	10.6	8.09
6.	5.58	5.58	3.59	2.91	1.99	2.67	.0178	7.39	.0382	7.43	5.30	.268	.266	13.3	13.3	11.3	8.48
8.	4.56	4.56	3.05	2.33	1.52	2.23	.0101	9.12	.0643	9.18	6.62	.185	.184	13.9	13.9	12.4	9.13
10.	3.89	3.89	2.66	1.93	1.23	1.96	.00660	10.7	.0890	10.8	7.70	.141	.140	14.8	14.8	13.6	9.77
15.	2.88	2.88	2.04	1.40	.834	1.48	.00273	13.7	.138	13.8	9.34	.0872	.0869	16.8	16.8	15.9	10.8
20.	2.31	2.31	1.68	1.06	.632	1.25	.00130	16.1	.173	16.3	10.2	.0642	.0640	18.7	18.7	18.0	11.3
30.	1.68	1.68	1.26	.672	.425	1.01		19.2	.225	19.4	10.9	.0468	.0467	21.1	21.1	20.7	11.6
40.	1.34	1.34	1.02	.480	.321	.860		21.4	.262	21.7	10.8	.0297	.0297	23.1	23.1	22.7	11.3
50.	1.12	1.12	.859	.365	.257	.755		23.0	.290	23.3	10.6	.0232	.0232	24.4	24.4	24.2	11.0
60.	.961	.961	.746	.283	.215	.678		24.2	.312	24.5	10.4	.0189	.0189	25.5	25.5	25.3	10.7
80.	.758	.758	.596	.193	.162	.565		26.1	.345	26.4	10.1	.0138	.0138	27.2	27.2	27.0	10.3
100.	.629	.629	.500	.142	.130	.487		27.5	.370	27.9	9.62	.0109	.0109	28.5	28.5	28.4	9.77

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(cm^2/g = 0.003166 x barns/atom)

E (MeV)	$(\frac{\mu}{\rho})^{KN}_{inc,t}$	$(\frac{\mu}{\rho})^{BD}_{inc,t}$	$(\frac{\mu}{\rho})^{KN}_{inc,a}$	$(\frac{\mu}{\rho})^{BD}_{inc,a}$	$(\frac{\mu}{\rho})^{KN}_{inc,s}$	$(\frac{\mu}{\rho})^{BD}_{inc,s}$	$(\frac{\mu}{\rho})_{coh}$	$(\frac{\mu}{\rho})_{\kappa n}$	$(\frac{\mu}{\rho})_{\kappa e}$	$(\frac{\mu}{\rho})_{\kappa,t}$	$(\frac{\mu}{\rho})_{\kappa,a}$	$(\frac{\mu}{\rho})_{\tau,t}$	$(\frac{\mu}{\rho})_{\tau,a}$	$(\frac{\mu}{\rho})_{tot,t}$	$(\frac{\mu}{\rho})_{tot,t-coh}$	$(\frac{\mu}{\rho})_{tot,a}$	$(\frac{\mu}{\rho})_{tot,en}$
.001	.160	.00377	.000311	.0000074	.159	.00377	11.7					5410.	5410.	5410.	5410.	5410.	5410.
.0015	.159	.00674	.000465	.0000197	.159	.00671	11.2					2230.	2230.	2240.	2230.	2230.	2230.
M_V .001960	.159	.00943	.000605	.0000358	.158	.00940	10.7					1240.	1240.	1250.	1240.	1240.	1240.
.002	.159	.00969	.000617	.0000377	.158	.00966	10.7					3890.	3890.	3890.	3890.	3890.	3890.
M_{IV} .002031	.159	.00988	.000627	.0000389	.158	.00985	10.6					3740.	3740.	3740.	3740.	3740.	3740.
M_{III} .002457	.159	.0123	.000754	.0000589	.158	.0123	10.2					3610.	3610.	3610.	3610.	3610.	3610.
M_{II} .002792	.158	.0143	.000855	.0000769	.157	.0142	9.81					4080.	4080.	4080.	4080.	4080.	4080.
.003	.158	.0155	.000918	.0000896	.157	.0154	9.59					2460.	2460.	2470.	2460.	2460.	2460.
M_I .003052	.158	.0157	.000934	.0000928	.157	.0156	9.56					2830.	2830.	2840.	2830.	2830.	2830.
.004	.158	.0209	.00121	.000161	.156	.0207	8.58					2030.	2030.	2040.	2030.	2030.	2030.
.005	.157	.0261	.00150	.000250	.155	.0258	7.66					2420.	2420.	2430.	2420.	2420.	2420.
.006	.156	.0310	.00179	.000355	.155	.0307	6.87					2000.	2000.	2010.	2000.	2000.	2000.
.008	.155	.0399	.00235	.000605	.153	.0393	5.57					1920.	1920.	1930.	1920.	1920.	1920.
.01	.154	.0472	.00289	.000883	.151	.0462	4.59					2240.	2240.	2250.	2240.	2240.	2240.
L_{III} .010871	.154	.0500	.00312	.00102	.150	.0491	4.24					1100.	1100.	1110.	1100.	1100.	1100.
L_{II} .012385	.153	.0548	.00351	.00126	.149	.0535	3.70					614.	614.	621.	614.	614.	614.
L_I .012969	.152	.0564	.00367	.00136	.149	.0551	3.51					380.	380.	386.	380.	380.	380.
.015	.151	.0614	.00418	.00170	.147	.0598	2.98					176.	176.	181.	176.	176.	176.
.02	.149	.0719	.00535	.00259	.143	.0693	2.08					96.6	96.6	101.	96.6	96.6	96.6
.03	.144	.0858	.00747	.00446	.136	.0814	1.22					77.9	77.9	82.3	77.9	77.9	77.9
.04	.139	.0937	.00928	.00624	.130	.0874	.798					212.	159.	217.	212.	212.	159.
.05	.135	.0981	.0109	.00792	.124	.0902	.560					151.	118.	155.	151.	151.	118.
.06	.131	.101	.0123	.00943	.119	.0912	.418					209.	160.	212.	209.	209.	160.
K .073871	.126	.102	.0139	.0112	.112	.0909	.297					185.	144.	188.	185.	185.	144.
.08	.124	.102	.0146	.0119	.110	.0899	.255					214.	166.	218.	214.	214.	166.
.1	.118	.102	.0164	.0140	.102	.0877	.169					145.	117.	148.	145.	145.	117.
.15	.107	.0981	.0194	.0178	.0874	.0804	.0798					67.8	57.9	70.0	67.8	67.8	57.9
.2	.0978	.0924	.0211	.0200	.0766	.0725	.0462					22.9	20.7	24.2	23.0	22.9	20.7
.3	.0852	.0823	.0229	.0222	.0621	.0602	.0211					10.5	9.78	11.4	10.6	10.5	9.78
.4	.0763	.0747	.0236	.0229	.0526	.0519	.0119					5.73	5.38	6.40	5.83	5.73	5.38
.5	.0697	.0684	.0237	.0230	.0459	.0453	.00773					3.45	3.29	3.96	3.55	3.45	3.29
.6	.0643	.0636	.0237	.0230	.0408	.0405	.00535					1.92	1.84	2.32	2.02	1.93	1.86
.8	.0567	.0560	.0231	.0223	.0336	.0339	.00304					9.72	3.06	10.1	9.81	9.72	3.07
1.	.0510	.0507	.0224	.0211	.0285	.0295	.00195					7.88	2.90	8.23	7.98	7.88	2.91
1.5	.0412	.0412	.0204	.0194	.0209	.0218	.000880	.00139		.00139	.000421	4.37	2.16	4.65	4.46	4.40	2.17
2.	.0351	.0351	.0187	.0175	.0165	.0176	.000497	.00450		.00450	.00206	1.49	.991	1.67	1.59	1.51	1.01
3.	.0277	.0277	.0160	.0144	.0117	.0133	.000222	.0105	.00000969	.0105	.00640	.693	.519	.833	.785	.716	.538
4.	.0231	.0231	.0141	.0122	.00909	.0110	.000125	.0157	.0000399	.0158	.0105	.237	.197	.342	.320	.260	.219
5.	.0200	.0200	.0125	.0105	.00744	.00943	.0000817	.0199	.0000782	.0200	.0140	.113	.0988	.200	.188	.137	.122
6.	.0177	.0177	.0114	.00921	.00630	.00845	.0000564	.0234	.000121	.0235	.0168	.0655	.0589	.142	.134	.0893	.0820
8.	.0144	.0144	.00966	.00738	.00481	.00706	.0000320	.0289	.000204	.0291	.0210	.0424	.0389	.111	.106	.0662	.0621
10.	.0123	.0123	.00842	.00611	.00389	.00621	.0000209	.0339	.000282	.0342	.0244	.0220	.0206	.0810	.0782	.0453	.0431
15.	.00912	.00912	.00646	.00443	.00264	.00469	.0000086	.0434	.000437	.0437	.0296	.0140	.0133	.0665	.0646	.0364	.0345
20.	.00731	.00731	.00532	.00336	.00200	.00396	.0000041	.0510	.000548	.0516	.0323	.00659	.00636	.0500	.0491	.0284	.0262
30.	.00532	.00532	.00399	.00213	.00135	.00320		.0608	.000712	.0614	.0345	.00405	.00396	.0443	.0437	.0272	.0235
40.	.00424	.00424	.00323	.00152	.00102	.00272		.0678	.000829	.0687	.0342	.00219	.00215	.0405	.0405	.0287	.0229
50.	.00355	.00355	.00272	.00116	.000814	.00239		.0728	.000918	.0738	.0336	.00146	.00144	.0405	.0405	.0313	.0242
60.	.00304	.00304	.00236	.000896	.000681	.00215		.0766	.000988	.0776	.0329	.00108	.00107	.0412	.0412	.0336	.0256
80.	.00240	.00240	.00189	.000611	.000513	.00179		.0826	.00109	.0836	.0320	.000848	.000842	.0421	.0421	.0358	.0268
100.	.00199	.00199	.00158	.000450	.000412	.00154		.0871	.00117	.0883	.0305	.000586	.000583	.0440	.0440	.0393	.0289
												.000446	.000443	.0469	.0469	.0431	.0309
												.000276	.000275	.0532	.0532	.0503	.0342
												.000203	.000203	.0592	.0592	.0570	.0358
												.000129	.000129	.0668	.0668	.0655	.0367
												.0000940	.0000940	.0731	.0731	.0719	.0358
												.0000735	.0000735	.0773	.0773	.0766	.0348
												.0000598	.0000598	.0807	.0807	.0801	.0339
												.0000437	.0000437	.0861	.0861	.0855	.0326
												.0000345	.0000345	.0902	.0902	.0899	.0309

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(barns/atom)

E (MeV)	KN $\sigma_{inc,t}$	BD $\sigma_{inc,t}$	KN $\sigma_{inc,a}$	BD $\sigma_{inc,a}$	KN $\sigma_{inc,s}$	BD $\sigma_{inc,s}$	σ_{coh}	$\sigma_{n,n}$	$\sigma_{n,e}$	$\sigma_{n,t}$	$\sigma_{n,a}$	$\sigma_{r,t}$	$\sigma_{r,a}$	$\sigma_{tot,t}$	$\sigma_{tot,t-coh}$	$\sigma_{tot,a}$	$\sigma_{tot,en}$
												1790000.	1790000.	1790000.	1790000.	1790000.	1790000.
.001	51.0	1.07	.0994	.00208	50.9	1.07	3780.					739000.	739000.	743000.	739000.	739000.	739000.
.0015	50.9	1.98	.149	.00578	50.8	1.97	3640.					395000.	395000.	398000.	395000.	395000.	395000.
.002	50.8	2.92	.197	.0113	50.6	2.91	3470.					376000.	376000.	379000.	376000.	376000.	376000.
K_V .002040	50.8	2.99	.201	.0118	50.6	2.98	3460.					1180000.	1180000.	1180000.	1180000.	1180000.	1180000.
K_{IV} .002116	50.8	3.13	.208	.0128	50.6	3.12	3430.					1090000.	1090000.	1090000.	1090000.	1090000.	1090000.
K_{III} .002551	50.7	3.94	.250	.0195	50.5	3.92	3280.					1230000.	1230000.	1230000.	1230000.	1230000.	1230000.
K_{II} .002908	50.6	4.58	.285	.0257	50.4	4.55	3150.					745000.	745000.	748000.	745000.	745000.	745000.
.003	50.6	4.74	.293	.0275	50.3	4.71	3120.					857000.	857000.	860000.	857000.	857000.	857000.
K_I .003173	50.6	5.05	.310	.0309	50.3	5.02	3060.					612000.	612000.	615000.	612000.	612000.	612000.
.004	50.4	6.48	.388	.0499	50.0	6.43	2790.					728000.	728000.	731000.	728000.	728000.	728000.
.005	50.2	8.16	.481	.0782	49.8	8.08	2490.					670000.	670000.	673000.	670000.	670000.	670000.
.006	50.0	9.76	.573	.112	49.5	9.65	2230.					582000.	582000.	585000.	582000.	582000.	582000.
.008	49.7	12.6	.752	.191	48.9	12.4	1810.					677000.	677000.	680000.	677000.	677000.	677000.
.01	49.3	15.0	.924	.281	48.4	14.7	1490.					368000.	368000.	371000.	368000.	368000.	368000.
L_{III} .011215	49.1	16.3	1.03	.341	48.1	16.0	1340.					206000.	206000.	208000.	206000.	206000.	206000.
L_{II} .012824	48.8	17.8	1.16	.423	47.6	17.4	1160.					126000.	126000.	128000.	126000.	126000.	126000.
L_I .013419	48.7	18.3	1.21	.454	47.5	17.8	1100.					58600.	58600.	60400.	58600.	58600.	58600.
.015	48.4	19.5	1.34	.539	47.1	19.0	971.					32300.	32300.	33800.	32300.	32300.	32300.
.02	47.6	22.9	1.72	.826	45.9	22.1	680.					23900.	23900.	25300.	23900.	23900.	23900.
.03	46.0	27.3	2.39	1.42	43.6	25.9	397.					64600.	47800.	66000.	64600.	64600.	47800.
.04	44.6	29.8	2.97	1.99	41.6	27.8	261.					45700.	35300.	46900.	45700.	45700.	35300.
.05	43.2	31.3	3.49	2.53	39.7	28.8	183.					63100.	47900.	64300.	63100.	63100.	47900.
.06	42.0	32.1	3.94	3.01	38.1	29.1	136.					55900.	43100.	57000.	55900.	55900.	43100.
K .076111	40.2	32.6	4.54	3.68	35.7	28.9	91.6					64900.	49800.	66000.	64900.	64900.	49800.
.08	39.8	32.6	4.66	3.82	35.2	28.8	83.4					48100.	38100.	49100.	48100.	48100.	38100.
.1	37.9	32.5	5.24	4.48	32.7	28.0	55.3					22500.	19000.	23200.	22500.	22500.	19000.
.15	34.2	31.3	6.20	5.68	28.0	25.6	26.1					7630.	6840.	8050.	7660.	7630.	6840.
.2	31.3	29.5	6.77	6.38	24.5	23.1	15.1					3510.	3240.	3800.	3540.	3510.	3240.
.3	27.2	26.3	7.34	7.09	19.9	19.2	6.88					1910.	1790.	2120.	1940.	1910.	1790.
.4	24.4	23.9	7.55	7.31	16.8	16.6	3.89					1150.	1090.	1320.	1180.	1150.	1090.
.5	22.3	21.9	7.59	7.38	14.7	14.5	2.52					590.	566.	714.	623.	595.	570.
.6	20.6	20.4	7.57	7.36	13.0	13.0	1.74					2970.	936.	3090.	3000.	2970.	940.
.8	18.1	18.0	7.40	7.16	10.7	10.8	.995					2600.	906.	2720.	2630.	2600.	910.
1.	16.3	16.2	7.15	6.76	9.11	9.44	.638					1450.	694.	1540.	1480.	1460.	698.
1.5	13.2	13.2	6.54	6.20	6.68	7.00	.287	.455		.455	.138	493.	322.	550.	524.	499.	328.
2.	11.3	11.2	5.98	5.58	5.29	5.62	.162	1.47		1.47	.675	229.	169.	274.	258.	236.	175.
3.	8.86	8.85	5.11	4.59	3.75	4.26	.0723	3.43	.00310	3.43	2.08	78.9	65.2	112.	105.	86.2	72.3
4.	7.41	7.41	4.50	3.91	2.91	3.50	.0409	5.10	.0127	5.11	3.41	37.7	32.8	65.5	61.6	45.3	40.1
5.	6.40	6.40	4.02	3.37	2.38	3.03	.0266	6.45	.0250	6.47	4.52	21.8	19.5	46.2	43.7	29.4	26.9
6.	5.65	5.65	3.64	2.94	2.01	2.71	.0184	7.58	.0387	7.62	5.44	14.1	12.9	36.2	34.5	21.7	20.3
8.	4.62	4.62	3.09	2.36	1.54	2.26	.0105	9.34	.0651	9.41	6.76	7.38	6.90	26.4	25.4	14.8	14.1
10.	3.94	3.94	2.69	1.95	1.25	1.99	.00682	11.0	.0901	11.1	7.90	4.69	4.45	21.5	20.9	11.8	11.2
15.	2.92	2.92	2.07	1.41	.845	1.51	.00285	14.0	.139	14.1	9.49	2.21	2.13	16.2	15.9	9.20	8.47
20.	2.34	2.34	1.70	1.06	.640	1.28	.00134	16.5	.175	16.7	10.4	1.35	1.31	14.2	14.0	8.80	7.56
30.	1.70	1.70	1.27	.678	.430	1.02		19.6	.227	19.8	11.1	.730	.717	13.1	13.0	9.27	7.39
40.	1.35	1.35	1.03	.481	.325	.869		21.9	.265	22.2	11.0	.487	.481	13.0	13.0	10.1	7.80
50.	1.13	1.13	.870	.367	.260	.763		23.6	.294	23.9	10.8	.360	.356	13.3	13.2	10.8	8.25
60.	.973	.973	.755	.286	.218	.687		24.9	.316	25.2	10.7	.285	.283	13.6	13.6	11.5	8.66
80.	.768	.768	.604	.194	.164	.574		26.7	.350	27.0	10.3	.195	.194	14.2	14.2	12.7	9.31
100.	.638	.638	.506	.144	.131	.494		28.1	.375	28.5	9.80	.149	.148	15.2	15.2	13.9	10.0
												.0931	.0928	17.1	17.1	16.3	11.0
												.0675	.0673	19.1	19.1	18.5	11.5
												.0431	.0430	21.5	21.5	21.1	11.8
												.0314	.0314	23.6	23.6	23.3	11.5
												.0246	.0246	25.1	25.1	24.8	11.2
												.0200	.0200	26.2	26.2	26.0	11.0
												.0145	.0145	27.8	27.8	27.6	10.5
												.0115	.0115	29.1	29.1	29.0	9.9A

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(cm^2/g = 0.003133 x barns/atom)

E (MeV)	$(\frac{\mu}{\rho})^{KN}_{inc,t}$	$(\frac{\mu}{\rho})^{BD}_{inc,t}$	$(\frac{\mu}{\rho})^{KN}_{inc,a}$	$(\frac{\mu}{\rho})^{BD}_{inc,a}$	$(\frac{\mu}{\rho})^{KN}_{inc,s}$	$(\frac{\mu}{\rho})^{BD}_{inc,s}$	$(\frac{\mu}{\rho})_{coh}$	$(\frac{\mu}{\rho})_{\kappa n}$	$(\frac{\mu}{\rho})_{\kappa e}$	$(\frac{\mu}{\rho})_{\kappa,t}$	$(\frac{\mu}{\rho})_{\kappa,a}$	$(\frac{\mu}{\rho})_{\tau,t}$	$(\frac{\mu}{\rho})_{\tau,a}$	$(\frac{\mu}{\rho})_{tot,t}$	$(\frac{\mu}{\rho})_{tot,t-coh}$	$(\frac{\mu}{\rho})_{tot,a}$	$(\frac{\mu}{\rho})_{tot,er.}$
.001	.160	.00335	.000311	.0000065	.159	.00335	11.8					5610.	5610.	5610.	5610.	5610.	5610.
.0015	.159	.00620	.000467	.0000181	.159	.00617	11.4					2320.	2320.	2330.	2320.	2320.	2320.
.002	.159	.00915	.000617	.0000354	.159	.00912	10.9					1240.	1240.	1250.	1240.	1240.	1240.
M_V .002040	.159	.00937	.000630	.0000370	.159	.00934	10.8					1180.	1180.	1190.	1180.	1180.	1180.
M_{IV} .002116	.159	.00981	.000652	.0000401	.159	.00977	10.7					3700.	3700.	3700.	3700.	3700.	3700.
M_{III} .002551	.159	.0123	.000783	.0000611	.158	.0123	10.3					3410.	3410.	3410.	3410.	3410.	3410.
M_{II} .002908	.159	.0143	.000893	.0000805	.158	.0143	9.87					3850.	3850.	3850.	3850.	3850.	3850.
.003	.159	.0149	.000918	.0000862	.158	.0148	9.77					2330.	2330.	2340.	2330.	2330.	2330.
M_I .003173	.159	.0158	.000971	.0000968	.158	.0157	9.59					2680.	2680.	2690.	2680.	2680.	2680.
.004	.158	.0203	.00122	.000156	.157	.0201	8.74					1920.	1920.	1930.	1920.	1920.	1920.
.005	.157	.0256	.00151	.000245	.156	.0253	7.80					2280.	2280.	2290.	2280.	2280.	2280.
.006	.157	.0306	.00180	.000351	.155	.0302	6.99					2100.	2100.	2110.	2100.	2100.	2100.
.008	.156	.0395	.00236	.000598	.153	.0388	5.67					1820.	1820.	1830.	1820.	1820.	1820.
.01	.154	.0470	.00289	.000880	.152	.0461	4.67					2120.	2120.	2130.	2120.	2120.	2120.
L_{III} .011215	.154	.0511	.00323	.00107	.151	.0501	4.20					1150.	1150.	1160.	1150.	1150.	1150.
L_{II} .012824	.153	.0558	.00363	.00133	.149	.0545	3.63					645.	645.	652.	645.	645.	645.
L_I .013419	.153	.0573	.00379	.00142	.149	.0558	3.45					395.	395.	401.	395.	395.	395.
.015	.152	.0611	.00420	.00169	.148	.0595	3.04					184.	184.	189.	184.	184.	184.
.02	.149	.0717	.00539	.00259	.144	.0692	2.13					101.	101.	106.	101.	101.	101.
.03	.144	.0855	.00749	.00445	.137	.0811	1.24					74.9	74.9	79.3	74.9	74.9	74.9
.04	.140	.0934	.00931	.00623	.130	.0871	.818					202.	150.	207.	202.	202.	150.
.05	.135	.0981	.0109	.00793	.124	.0902	.573					143.	111.	147.	143.	143.	111.
.06	.132	.101	.0123	.00943	.119	.0912	.426					198.	150.	201.	198.	198.	150.
K .076111	.126	.102	.0142	.0115	.112	.0905	.287					175.	135.	179.	175.	175.	135.
.08	.125	.102	.0146	.0120	.110	.0902	.261					203.	156.	207.	203.	203.	156.
.1	.119	.102	.0164	.0140	.102	.0877	.173					151.	119.	154.	151.	151.	119.
.15	.107	.0981	.0194	.0178	.0877	.0802	.0818					70.5	59.5	72.7	70.5	70.5	59.5
.2	.0981	.0924	.0212	.0200	.0768	.0724	.0473					23.9	21.4	25.2	24.0	23.9	21.4
.3	.0852	.0824	.0230	.0222	.0623	.0602	.0216					11.0	10.2	11.9	11.1	11.0	10.2
.4	.0764	.0749	.0237	.0229	.0526	.0520	.0122					6.98	5.61	6.64	6.08	5.98	5.61
.5	.0699	.0686	.0238	.0231	.0461	.0454	.00790					3.60	3.41	4.14	3.70	3.60	3.41
.6	.0645	.0639	.0237	.0231	.0407	.0407	.00545					1.85	1.77	2.24	1.95	1.86	1.79
.8	.0567	.0564	.0232	.0224	.0335	.0338	.00312					9.31	2.93	9.68	9.40	9.31	2.95
1.	.0511	.0508	.0224	.0212	.0285	.0296	.00200					8.15	2.84	8.52	8.24	8.15	2.85
1.5	.0414	.0414	.0205	.0194	.0209	.0219	.000899	.00143		.00143	.000432	4.54	2.17	4.82	4.66	4.57	2.19
2.	.0354	.0351	.0187	.0175	.0166	.0176	.000508	.00461		.00461	.00211	1.54	1.01	1.72	1.64	1.56	1.03
3.	.0278	.0277	.0160	.0144	.0117	.0133	.000227	.0107	.00000971	.0107	.00652	.717	.529	.858	.808	.739	.548
4.	.0232	.0232	.0141	.0123	.00912	.0110	.000128	.0160	.0000398	.0160	.0107	.247	.204	.351	.329	.270	.227
5.	.0201	.0201	.0126	.0106	.00746	.00949	.0000833	.0202	.0000783	.0203	.0142	.118	.103	.205	.193	.142	.126
6.	.0177	.0177	.0114	.00921	.00630	.00849	.0000576	.0237	.000121	.0239	.0170	.0683	.0611	.145	.137	.0921	.0843
8.	.0145	.0145	.00968	.00739	.00482	.00708	.0000329	.0293	.000204	.0295	.0212	.0442	.0404	.113	.108	.0680	.0636
10.	.0123	.0123	.00843	.00611	.00392	.00623	.0000214	.0345	.000282	.0348	.0248	.0231	.0216	.0827	.0796	.0464	.0442
15.	.00915	.00915	.00649	.00442	.00265	.00473	.0000089	.0439	.000435	.0442	.0297	.0147	.0139	.0674	.0655	.0370	.0351
20.	.00733	.00733	.00533	.00332	.00201	.00401	.0000042	.0517	.000548	.0523	.0326	.00692	.00667	.0508	.0498	.0288	.0265
30.	.00533	.00533	.00398	.00212	.00135	.00320		.0614	.000711	.0620	.0348	.00423	.00410	.0445	.0439	.0276	.0237
40.	.00423	.00423	.00323	.00151	.00102	.00272		.0686	.000830	.0696	.0345	.00229	.00225	.0410	.0407	.0290	.0232
50.	.00354	.00354	.00273	.00115	.000815	.00239		.0739	.000921	.0749	.0338	.00153	.00151	.0407	.0407	.0316	.0244
60.	.00305	.00305	.00237	.000896	.000683	.00215		.0780	.000990	.0790	.0335	.00113	.00112	.0417	.0414	.0338	.0258
80.	.00241	.00241	.00189	.000608	.000514	.00180		.0837	.00110	.0846	.0323	.000893	.000887	.0426	.0426	.0360	.0271
100.	.00200	.00200	.00159	.000451	.000410	.00155		.0880	.00117	.0893	.0307	.000611	.000608	.0445	.0445	.0398	.0292
												.000467	.000464	.0476	.0476	.0435	.0313
												.000292	.000291	.0536	.0536	.0511	.0345
												.000211	.000211	.0598	.0598	.0580	.0360
												.000135	.000135	.0674	.0674	.0661	.0370
												.0000984	.0000984	.0739	.0739	.0730	.0360
												.0000771	.0000771	.0786	.0786	.0777	.0351
												.0000627	.0000627	.0821	.0821	.0815	.0345
												.0000454	.0000454	.0871	.0871	.0865	.0329
												.0000360	.0000360	.0912	.0912	.0909	.0312

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(barns/atom)

E (MeV)	KN $\sigma_{inc,t}$	BD $\sigma_{inc,t}$	KN $\sigma_{inc,a}$	BD $\sigma_{inc,a}$	KN $\sigma_{inc,s}$	BD $\sigma_{inc,s}$	σ_{coh}	$\sigma_{\gamma n}$	$\sigma_{\gamma e}$	$\sigma_{\gamma,t}$	$\sigma_{\gamma,a}$	$\sigma_{\gamma,t}$	$\sigma_{\gamma,a}$	$\sigma_{tot,t}$	$\sigma_{tot,t-coh}$	$\sigma_{tot,a}$	$\sigma_{tot,en}$
.001	51.7	1.04	.101	.00203	51.6	1.04	3890.					1870000.	1870000.	1870000.	1870000.	1870000.	1870000.
.0015	51.6	1.95	.150	.00569	51.4	1.94	3760.					769000.	769000.	773000.	769000.	769000.	769000.
.002	51.5	2.90	.200	.0113	51.3	2.89	3590.					409000.	409000.	413000.	409000.	409000.	409000.
M_V .002122	51.5	3.13	.212	.0129	51.2	3.12	3550.					359000.	359000.	363000.	359000.	359000.	359000.
M_{IV} .002202	51.4	3.28	.220	.0140	51.2	3.27	3520.					1120000.	1120000.	1120000.	1120000.	1120000.	1120000.
M_{III} .002645	51.4	4.10	.263	.0210	51.1	4.08	3360.					1040000.	1040000.	1040000.	1040000.	1040000.	1040000.
.003	51.3	4.74	.297	.0275	51.0	4.71	3230.					1180000.	1180000.	1180000.	1180000.	1180000.	1180000.
M_{II} .003027	51.3	4.78	.300	.0280	51.0	4.75	3220.					716000.	716000.	719000.	716000.	716000.	716000.
M_I .003297	51.2	5.26	.326	.0335	50.9	5.23	3120.					824000.	824000.	827000.	824000.	824000.	824000.
.004	51.1	6.46	.393	.0497	50.7	6.41	2880.					598000.	598000.	601000.	598000.	598000.	598000.
.005	50.9	8.16	.487	.0782	50.4	8.08	2570.					584000.	584000.	587000.	584000.	584000.	584000.
.006	50.7	9.77	.580	.112	50.1	9.66	2300.					695000.	695000.	698000.	695000.	695000.	695000.
.008	50.3	12.7	.762	.192	49.6	12.5	1860.					558000.	558000.	561000.	558000.	558000.	558000.
.01	50.0	15.1	.936	.283	49.0	14.8	1540.					647000.	647000.	650000.	647000.	647000.	647000.
L_{III} .011564	49.7	16.8	1.07	.362	48.6	16.4	1340.					389000.	389000.	392000.	389000.	389000.	389000.
L_{II} .013273	49.4	18.3	1.21	.450	48.1	17.9	1150.					216000.	216000.	219000.	216000.	216000.	216000.
L_I .013880	49.3	18.8	1.26	.482	48.0	18.3	1100.					134000.	134000.	136000.	134000.	134000.	134000.
.015	49.1	19.7	1.36	.565	47.7	19.2	1000.					62300.	62300.	64200.	62300.	62300.	62300.
.02	48.2	23.1	1.74	.834	46.5	22.3	703.					34300.	34300.	35900.	34300.	34300.	34300.
.03	46.6	27.5	2.43	1.43	44.2	26.1	410.					23300.	23300.	24700.	23300.	23300.	23300.
.04	45.1	30.1	3.01	2.01	42.1	28.1	270.					62400.	45700.	63800.	62400.	62400.	45700.
.05	43.8	31.6	3.53	2.55	40.3	29.1	190.					43700.	33500.	44900.	43700.	43700.	33500.
.06	42.6	32.4	3.99	3.04	38.6	29.4	141.					60400.	45500.	61600.	60400.	60400.	45500.
K .078395	40.5	32.9	4.67	3.79	35.8	29.1	89.6					53600.	41000.	54700.	53600.	53600.	41000.
.08	40.3	32.9	4.72	3.85	35.6	29.0	86.3					62200.	47400.	63300.	62200.	62200.	47400.
.1	38.4	32.8	5.30	4.53	33.1	28.3	57.2					50800.	39600.	51800.	50800.	50800.	39600.
.15	34.6	31.7	6.28	5.75	28.3	25.9	27.0					23700.	19800.	24400.	23700.	23700.	19800.
.2	31.7	29.9	6.85	6.46	24.9	23.4	15.6					8050.	7160.	8490.	8080.	8080.	7160.
.3	27.6	26.7	7.43	7.20	20.1	19.5	7.12					3700.	3390.	4000.	3730.	3700.	3390.
.4	24.7	24.2	7.65	7.41	17.1	16.8	4.03					2030.	1900.	2250.	2060.	2030.	1900.
.5	22.5	22.2	7.69	7.48	14.9	14.7	2.61					1230.	1160.	1400.	1260.	1230.	1160.
.6	20.9	20.6	7.67	7.44	13.2	13.2	1.80					575.	551.	697.	608.	580.	555.
.8	18.3	18.2	7.49	7.24	10.8	11.0	1.02					2870.	904.	2990.	2900.	2870.	908.
1.	16.5	16.4	7.25	6.84	9.23	9.56	.660					2730.	898.	2850.	2760.	2730.	902.
1.5	13.4	13.3	6.62	6.25	6.76	7.05	.296	.470		.470	.142	1510.	699.	1600.	1540.	1520.	704.
2.	11.4	11.4	6.06	5.68	5.36	5.72	.168	1.52		1.52	.698	519.	333.	578.	551.	525.	339.
3.	8.98	8.97	5.18	4.65	3.79	4.32	.0749	3.52	.00314	3.52	2.13	241.	176.	286.	271.	248.	182.
4.	7.50	7.50	4.55	3.94	2.95	3.55	.0424	5.22	.0129	5.23	3.49	83.2	68.3	117.	110.	90.6	75.5
5.	6.48	6.48	4.07	3.40	2.41	3.08	.0275	6.62	.0253	6.65	4.63	39.8	34.5	68.0	64.0	47.4	41.9
6.	5.73	5.73	3.69	2.98	2.04	2.75	.0190	7.73	.0392	7.77	5.54	22.9	20.4	47.7	45.1	30.6	27.9
8.	4.68	4.68	3.13	2.38	1.56	2.30	.0108	9.50	.0660	9.57	6.87	14.9	13.6	37.3	35.5	22.6	21.0
10.	3.99	3.99	2.73	1.97	1.26	2.02	.00705	11.2	.0914	11.3	8.03	7.80	7.28	27.0	26.8	15.3	14.5
15.	2.95	2.95	2.10	1.42	.856	1.53	.00298	14.4	.141	14.5	9.70	4.96	4.69	22.0	21.4	12.2	11.5
20.	2.37	2.37	1.72	1.07	.648	1.30	.00139	16.8	.177	17.0	10.5	2.37	2.29	16.4	16.1	9.46	8.68
30.	1.73	1.73	1.29	.689	.436	1.04		20.0	.230	20.2	11.2	1.44	1.40	14.5	14.4	9.02	7.78
40.	1.37	1.37	1.04	.486	.329	.884		22.3	.268	22.6	11.1	.773	.759	13.3	13.3	9.47	7.54
50.	1.15	1.15	.881	.373	.264	.777		24.1	.297	24.4	11.0	.514	.507	13.3	13.2	10.3	7.94
60.	.986	.986	.765	.289	.221	.697		25.4	.319	25.7	10.9	.380	.376	13.5	13.5	11.1	8.41
80.	.778	.778	.612	.197	.166	.581		27.3	.354	27.7	10.4	.300	.297	13.8	13.8	11.8	8.82
100.	.646	.646	.513	.145	.133	.501		28.7	.380	29.1	9.95	.208	.207	14.5	14.5	12.9	9.46
												.158	.157	15.5	15.4	14.2	10.2
												.0977	.0974	17.6	17.5	16.7	11.2
												.0712	.0710	19.4	19.4	18.8	11.6
												.0453	.0452	22.0	22.0	21.5	11.9
												.0330	.0330	24.0	24.0	23.7	11.6
												.0258	.0258	25.6	25.6	25.3	11.4
												.0210	.0210	26.7	26.7	26.5	11.2
												.0154	.0154	28.5	28.5	28.3	10.6
												.0121	.0121	29.8	29.8	29.6	10.1

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(cm^2/g = 0.003087 x barns/atom)

E (MeV)	$(\frac{\mu}{\rho})^{KN}_{inc,t}$	$(\frac{\mu}{\rho})^{BD}_{inc,t}$	$(\frac{\mu}{\rho})^{KN}_{inc,a}$	$(\frac{\mu}{\rho})^{BD}_{inc,a}$	$(\frac{\mu}{\rho})^{KN}_{inc,s}$	$(\frac{\mu}{\rho})^{BD}_{inc,s}$	$(\frac{\mu}{\rho})_{coh}$	$(\frac{\mu}{\rho})_{\kappa n}$	$(\frac{\mu}{\rho})_{\kappa e}$	$(\frac{\mu}{\rho})_{\kappa,t}$	$(\frac{\mu}{\rho})_{\kappa,a}$	$(\frac{\mu}{\rho})_{\tau,t}$	$(\frac{\mu}{\rho})_{\tau,a}$	$(\frac{\mu}{\rho})_{tot,t}$	$(\frac{\mu}{\rho})_{tot,t-coh}$	$(\frac{\mu}{\rho})_{tot,a}$	$(\frac{\mu}{\rho})_{tot,en}$
.001	.160	.00321	.000312	.0000063	.159	.00321	12.0					5770.	5770.	5770.	5770.	5770.	5770.
.0015	.159	.00602	.000463	.0000176	.159	.00599	11.6					2370.	2370.	2390.	2370.	2370.	2370.
.002	.159	.00895	.000617	.0000349	.158	.00892	11.1					1260.	1260.	1270.	1260.	1260.	1260.
M_V .002122	.159	.00966	.000654	.0000398	.158	.00963	11.0					1110.	1110.	1120.	1110.	1110.	1110.
M_{IV} .002202	.159	.0101	.000679	.0000432	.158	.0101	10.9					3460.	3460.	3460.	3460.	3460.	3460.
M_{III} .002645	.159	.0127	.000812	.0000648	.158	.0126	10.4					3210.	3210.	3210.	3210.	3210.	3210.
.003	.158	.0146	.000917	.0000849	.157	.0145	9.97					3640.	3640.	3640.	3640.	3640.	3640.
M_{II} .003027	.158	.0148	.000926	.0000864	.157	.0147	9.94					2210.	2220.	2210.	2210.	2210.	2210.
M_I .003297	.158	.0162	.00101	.000103	.157	.0161	9.63					2540.	2550.	2540.	2540.	2540.	2540.
.004	.158	.0199	.00121	.000153	.157	.0198	8.89					1850.	1860.	1850.	1850.	1850.	1850.
.005	.157	.0252	.00150	.000241	.156	.0249	7.93					1800.	1810.	1800.	1800.	1800.	1800.
.006	.157	.0302	.00179	.000346	.155	.0298	7.10					2150.	2150.	2150.	2150.	2150.	2150.
.008	.155	.0392	.00235	.000593	.153	.0386	5.74					1720.	1730.	1720.	1720.	1720.	1720.
.01	.154	.0466	.00289	.000874	.151	.0457	4.75					2000.	2010.	2000.	2000.	2000.	2000.
L_{III} .011564	.153	.0519	.00330	.00112	.150	.0506	4.14					1200.	1210.	1200.	1200.	1200.	1200.
L_{II} .013273	.152	.0565	.00374	.00139	.148	.0553	3.55					667.	676.	667.	667.	667.	667.
L_I .013880	.152	.0580	.00389	.00149	.148	.0565	3.40					414.	420.	414.	414.	414.	414.
.015	.152	.0608	.00420	.00168	.147	.0593	3.09					192.	198.	192.	192.	192.	192.
.02	.149	.0713	.00537	.00257	.144	.0688	2.17					106.	111.	106.	106.	106.	106.
.03	.144	.0849	.00750	.00441	.136	.0806	1.27					71.9	76.2	71.9	71.9	71.9	71.9
.04	.139	.0929	.00929	.00620	.130	.0867	.833					193.	141.	197.	193.	193.	141.
.05	.135	.0975	.0109	.00787	.124	.0898	.587					135.	103.	139.	135.	135.	103.
.06	.132	.100	.0123	.00938	.119	.0908	.435					186.	140.	190.	186.	186.	140.
K .078395	.125	.102	.0144	.0117	.111	.0898	.277					165.	127.	169.	165.	165.	127.
.08	.124	.102	.0146	.0119	.110	.0895	.266					192.	146.	195.	192.	192.	146.
.1	.119	.101	.0164	.0140	.102	.0874	.177					157.	122.	160.	157.	157.	122.
.15	.107	.0979	.0194	.0178	.0874	.0800	.0833					73.2	61.1	75.3	73.2	73.2	61.1
.2	.0979	.0923	.0211	.0199	.0769	.0722	.0482					24.9	22.1	26.2	24.9	24.9	22.1
.3	.0852	.0824	.0229	.0222	.0620	.0602	.0220					11.4	10.5	12.3	11.5	11.4	10.5
.4	.0762	.0747	.0236	.0229	.0528	.0519	.0124					6.27	5.87	6.95	6.36	6.27	5.87
.5	.0695	.0685	.0237	.0231	.0460	.0454	.00806					3.80	3.58	4.32	3.89	3.80	3.58
.6	.0645	.0636	.0237	.0230	.0407	.0407	.00556					1.78	1.70	2.15	1.88	1.79	1.71
.8	.0565	.0562	.0231	.0223	.0333	.034$_0$	.00315					8.86	2.79	9.23	8.95	8.86	2.80
1.	.0509	.0506	.0224	.0211	.0285	.0295	.00204					8.43	2.77	8.80	8.52	8.43	2.78
1.5	.0414	.0411	.0204	.0193	.0209	.0218	.000914	.00145		.00145	.000438	4.66	2.16	4.94	4.75	4.69	2.17
2.	.0352	.0352	.0187	.0175	.0165	.0177	.000519	.00469		.00469	.00215	1.60	1.03	1.78	1.70	1.62	1.05
3.	.0277	.0277	.0160	.0144	.0117	.0133	.000231	.0109	.00000969	.0109	.00658	.744	.543	.883	.837	.766	.562
4.	.0232	.0232	.0140	.0122	.00911	.0110	.000131	.0161	.0000398	.0161	.0108	.257	.211	.361	.340	.280	.233
5.	.0200	.0200	.0126	.0105	.00744	.00951	.0000849	.0204	.0000781	.0205	.0143	.123	.107	.210	.198	.146	.129
6.	.0177	.0177	.0114	.0092	.00630	.00849	.0000587	.0239	.000121	.0240	.0171	.0707	.0630	.147	.139	.0945	.0861
8.	.0144	.0144	.00966	.00735	.00482	.00710	.0000333	.0293	.000204	.0295	.0212	.0460	.0420	.115	.110	.0698	.0648
10.	.0123	.0123	.00843	.00608	.00389	.00624	.0000218	.0346	.000282	.0349	.0248	.0241	.0225	.0833	.0803	.0472	.0448
15.	.00911	.00911	.00648	.00438	.00264	.00472	.0000092	.0445	.000435	.0448	.0299	.0153	.0145	.0679	.0661	.0377	.0355
20.	.00732	.00732	.00531	.00330	.00200	.00401	.0000043	.0519	.000546	.0525	.0324	.00732	.00707	.0506	.0497	.0292	.0268
30.	.00534	.00534	.00398	.00213	.00135	.00321		.0617	.000710	.0624	.0346	.00445	.00432	.0448	.0445	.0278	.0240
40.	.00423	.00423	.00321	.00150	.00102	.00273		.0688	.000827	.0698	.0343	.00239	.00234	.0411	.0411	.0292	.0233
50.	.00355	.00355	.00272	.00115	.000815	.00240		.0744	.000917	.0753	.0340	.00159	.00157	.0411	.0407	.0318	.0245
60.	.00304	.00304	.00236	.000892	.000682	.00215		.0784	.000985	.0793	.0336	.00117	.00116	.0417	.0417	.0343	.0260
80.	.00240	.00240	.00189	.000608	.000512	.00179		.0843	.00109	.0855	.0321	.000926	.000917	.0426	.0426	.0364	.0272
100.	.00199	.00199	.00158	.000448	.000411	.00155		.0886	.00117	.0898	.0307	.000642	.000639	.0448	.0448	.0398	.0292
												.000488	.000485	.0478	.0475	.0438	.0315
												.000302	.000301	.0543	.0540	.0516	.0346
												.000220	.000219	.0599	.0599	.0580	.0358
												.000140	.000140	.0679	.0679	.0664	.0367
												.000102	.000102	.0741	.0741	.0732	.0358
												.0000796	.0000796	.0790	.0790	.0781	.0352
												.0000648	.0000648	.0824	.0824	.0818	.0346
												.0000475	.0000475	.0880	.0880	.0874	.0327
												.0000374	.0000374	.0920	.0920	.0914	.0312

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(barns/atom)

E (MeV)	$\sigma^{KN}_{inc,t}$	$\sigma^{BD}_{inc,t}$	$\sigma^{KN}_{inc,a}$	$\sigma^{BD}_{inc,a}$	$\sigma^{KN}_{inc,s}$	$\sigma^{BD}_{inc,s}$	σ_{coh}	σ_{xn}	σ_{xe}	$\sigma_{x,t}$	$\sigma_{x,a}$	$\sigma_{\gamma,t}$	$\sigma_{\gamma,a}$	$\sigma_{tot,t}$	$\sigma_{tot,t-coh}$	$\sigma_{tot,a}$	$\sigma_{tot,en}$
.001	52.3	1.07	.102	.00208	52.2	1.07	4000.					1970000.	1970000.	1970000.	1970000.	1970000.	1970000.
.0015	52.2	1.99	.152	.00580	52.1	1.98	3860.					804000.	804000.	808000.	804000.	804000.	804000.
.002	52.1	2.94	.202	.0114	51.9	2.93	3690.					427000.	427000.	431000.	427000.	427000.	427000.
M_V .002206	52.1	3.32	.223	.0142	51.9	3.31	3620.					344000.	344000.	348000.	344000.	344000.	344000.
M_{IV} .002291	52.1	3.48	.231	.0155	51.9	3.46	3590.					1080000.	1080000.	1080000.	1080000.	1080000.	1080000.
M_{III} .002743	52.0	4.32	.276	.0229	51.7	4.30	3420.					992000.	992000.	996000.	992000.	992000.	992000.
.003	51.9	4.78	.301	.0277	51.6	4.75	3320.					1120000.	1120000.	1120000.	1120000.	1120000.	1120000.
M_{II} .003150	51.9	5.05	.316	.0307	51.6	5.02	3270.					688000.	688000.	691000.	688000.	688000.	688000.
M_I .003425	51.9	5.54	.343	.0366	51.5	5.50	3170.					791000.	791000.	794000.	791000.	791000.	791000.
.004	51.7	6.54	.398	.0503	51.3	6.49	2960.					630000.	630000.	633000.	630000.	630000.	630000.
.005	51.5	8.22	.494	.0787	51.0	8.14	2640.					558000.	558000.	561000.	558000.	558000.	558000.
.006	51.3	9.82	.588	.112	50.8	9.71	2360.					664000.	664000.	667000.	664000.	664000.	664000.
.008	51.0	12.8	.771	.194	50.2	12.6	1910.					534000.	534000.	537000.	534000.	534000.	534000.
.01	50.6	15.3	.948	.287	49.7	15.0	1580.					618000.	618000.	621000.	618000.	618000.	618000.
L_{III} .011919	50.2	17.3	1.11	.384	49.1	16.9	1330.					410000.	410000.	413000.	410000.	410000.	410000.
L_{II} .013734	49.9	18.9	1.27	.480	48.6	18.4	1150.					229000.	229000.	232000.	229000.	229000.	229000.
L_I .014353	49.8	19.4	1.32	.513	48.5	18.9	1090.					141000.	141000.	143000.	141000.	141000.	141000.
.015	49.7	19.9	1.37	.550	48.3	19.3	1040.					65900.	65900.	67800.	65900.	65900.	65900.
.02	48.8	23.3	1.76	.841	47.1	22.5	725.					36300.	36300.	37900.	36300.	36300.	36300.
.03	47.2	27.8	2.46	1.45	44.8	26.4	423.					22700.	22700.	24000.	22700.	22700.	22700.
.04	45.7	30.4	3.05	2.03	42.7	28.4	278.					60200.	43800.	61500.	60200.	60200.	43800.
.05	44.4	31.9	3.58	2.57	40.8	29.3	196.					41900.	32000.	43100.	41900.	41900.	32000.
.06	43.1	32.8	4.04	3.08	39.1	29.7	146.					57900.	43300.	59100.	57900.	57900.	43300.
.08	40.9	33.3	4.79	3.90	36.1	29.4	89.1					51400.	39000.	52500.	51400.	51400.	39000.
K .080725	40.8	33.3	4.81	3.93	36.0	29.4	87.6					59700.	45200.	60800.	59700.	59700.	45200.
.1	38.9	33.2	5.37	4.58	33.6	28.6	59.1					53300.	40900.	54400.	53300.	53300.	40900.
.15	35.0	32.1	6.36	5.83	28.7	26.3	27.9					24900.	20500.	25600.	24900.	24900.	20500.
.2	32.1	30.3	6.94	6.55	25.2	23.7	16.2					8490.	7500.	8940.	8520.	8490.	7500.
.3	27.9	27.0	7.53	7.28	20.4	19.7	7.36					3910.	3570.	4220.	3940.	3910.	3570.
.4	25.0	24.5	7.75	7.50	17.3	17.0	4.16					2140.	1990.	2370.	2170.	2140.	1990.
.5	22.8	22.5	7.79	7.58	15.0	14.9	2.70					1290.	1210.	1470.	1320.	1290.	1210.
.6	21.1	20.9	7.76	7.52	13.4	13.4	1.87					576.	551.	698.	609.	581.	555.
.8	18.6	18.4	7.59	7.32	11.0	11.1	1.06					560.	536.	681.	593.	565.	540.
1.	16.7	16.6	7.34	6.91	9.35	9.69	.683					2770.	873.	2890.	2800.	2770.	877.
1.5	13.6	13.5	6.71	6.34	6.85	7.15	.306	.490		.490	.148	1580.	706.	1670.	1610.	1590.	711.
2.	11.6	11.5	6.14	5.73	5.42	5.77	.173	1.57		1.57	.721	540.	341.	600.	572.	546.	347.
3.	9.09	9.08	5.24	4.70	3.84	4.38	.0773	3.62	.00318	3.62	2.19	252.	182.	298.	282.	259.	189.
4.	7.60	7.60	4.61	3.99	2.99	3.61	.0438	5.37	.0131	5.38	3.59	87.0	71.0	121.	114.	94.5	78.3
5.	6.56	6.56	4.12	3.44	2.44	3.12	.0285	6.80	.0257	6.83	4.75	41.9	36.1	70.6	66.4	49.7	43.6
6.	5.80	5.80	3.74	3.01	2.07	2.79	.0196	7.94	.0397	7.98	5.68	24.2	21.5	49.4	46.7	32.0	29.1
8.	4.74	4.74	3.17	2.40	1.58	2.34	.0111	9.76	.0669	9.83	7.05	15.8	14.3	38.6	36.7	23.6	21.8
10.	4.04	4.04	2.76	1.99	1.28	2.05	.00726	11.5	.0925	11.6	8.21	8.30	7.73	27.8	26.7	15.9	15.0
15.	2.99	2.99	2.12	1.44	.867	1.55	.00311	14.7	.143	14.8	9.89	5.27	4.98	22.6	21.9	12.6	11.9
20.	2.40	2.40	1.74	1.08	.656	1.32	.00145	17.3	.180	17.5	10.8	2.50	2.41	16.8	16.5	9.70	8.90
30.	1.75	1.75	1.31	.693	.442	1.06		20.5	.233	20.7	11.5	1.52	1.48	14.8	14.6	9.23	7.93
40.	1.39	1.39	1.06	.491	.333	.899		22.9	.272	23.2	11.4	.820	.805	13.6	13.5	9.68	7.69
50.	1.16	1.16	.893	.375	.267	.785		24.7	.300	25.0	11.2	.548	.540	13.6	13.5	10.5	8.12
60.	.999	.999	.775	.292	.223	.707		26.0	.323	26.3	11.0	.402	.398	13.8	13.8	11.4	8.59
80.	.788	.788	.619	.199	.168	.589		28.0	.358	28.4	10.6	.318	.315	14.1	14.1	12.0	9.00
100.	.654	.654	.519	.146	.135	.508		29.4	.384	29.8	10.1	.220	.218	14.8	14.8	13.2	9.67
												.168	.167	15.8	15.8	14.5	10.4
												.104	.104	17.9	17.9	17.0	11.4
												.0756	.0754	20.0	20.0	19.3	12.0
												.0481	.0480	22.5	22.5	22.1	12.2
												.0350	.0350	24.6	24.6	24.3	11.9
												.0273	.0273	26.2	26.2	25.9	11.6
												.0223	.0223	27.3	27.3	27.1	11.3
												.0163	.0163	29.2	29.2	29.0	10.8
												.0128	.0128	30.5	30.5	30.3	10.3

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(cm^2/g = 0.003058 x barns/atom)

E (MeV)	$(\frac{\mu}{\rho})^{KN}_{inc,t}$	$(\frac{\mu}{\rho})^{BD}_{inc,t}$	$(\frac{\mu}{\rho})^{KN}_{inc,a}$	$(\frac{\mu}{\rho})^{BD}_{inc,a}$	$(\frac{\mu}{\rho})^{KN}_{inc,s}$	$(\frac{\mu}{\rho})^{BD}_{inc,s}$	$(\frac{\mu}{\rho})_{coh}$	$(\frac{\mu}{\rho})_{\pi n}$	$(\frac{\mu}{\rho})_{\pi e}$	$(\frac{\mu}{\rho})_{\pi,t}$	$(\frac{\mu}{\rho})_{\pi,a}$	$(\frac{\mu}{\rho})_{\tau,t}$	$(\frac{\mu}{\rho})_{\tau,a}$	$(\frac{\mu}{\rho})_{tot,t}$	$(\frac{\mu}{\rho})_{tot,t-coh}$	$(\frac{\mu}{\rho})_{tot,a}$	$(\frac{\mu}{\rho})_{tot,en}$
.001	.160	.00327	.000312	.0000064	.160	.00327	12.2					6020.	6020.	6020.	6020.	6020.	6020.
.0015	.160	.00609	.000465	.0000177	.159	.00605	11.8					2460.	2460.	2470.	2460.	2460.	2460.
.002	.159	.00899	.000618	.0000349	.159	.00896	11.3					1310.	1310.	1320.	1310.	1310.	1310.
M_V .002206	.159	.0102	.000682	.0000434	.159	.0101	11.1					1050.	1050.	1060.	1050.	1050.	1050.
M_{IV} .002291	.159	.0106	.000706	.0000474	.159	.0106	11.0					3300.	3300.	3300.	3300.	3300.	3300.
M_{III} .002743	.159	.0132	.000844	.0000700	.158	.0131	10.5					3030.	3030.	3050.	3030.	3030.	3030.
.003	.159	.0146	.000920	.0000847	.158	.0145	10.2					3420.	3420.	3420.	3420.	3420.	3420.
M_{II} .003150	.159	.0154	.000966	.0000939	.158	.0154	10.0					2100.	2100.	2110.	2100.	2100.	2100.
M_I .003425	.159	.0169	.00105	.000112	.157	.0168	9.69					2420.	2420.	2430.	2420.	2420.	2420.
.004	.158	.0200	.00122	.000154	.157	.0198	9.05					1930.	1930.	1940.	1930.	1930.	1930.
.005	.157	.0251	.00151	.000241	.156	.0249	8.07					1710.	1710.	1720.	1710.	1710.	1710.
.006	.157	.0300	.00180	.000342	.155	.0297	7.22					2030.	2030.	2040.	2030.	2030.	2030.
.008	.156	.0391	.00236	.000593	.154	.0385	5.84					1630.	1630.	1640.	1630.	1630.	1630.
.01	.155	.0468	.00290	.000878	.152	.0459	4.83					1890.	1890.	1900.	1890.	1890.	1890.
L_{III} .011919	.154	.0529	.00339	.00117	.150	.0517	4.07					1250.	1250.	1260.	1250.	1250.	1250.
L_{II} .013734	.153	.0578	.00388	.00147	.149	.0563	3.52					700.	700.	709.	700.	700.	700.
L_I .014353	.152	.0593	.00404	.00157	.148	.0578	3.33					431.	431.	437.	431.	431.	431.
.015	.152	.0609	.00419	.00168	.148	.0590	3.18					202.	202.	207.	202.	202.	202.
.02	.149	.0713	.00538	.00257	.144	.0688	2.22					111.	111.	116.	111.	111.	111.
.03	.144	.0850	.00752	.00443	.137	.0807	1.29					69.4	69.4	73.4	69.4	69.4	69.4
.04	.140	.0930	.00933	.00621	.131	.0868	.850					184.	134.	188.	184.	184.	134.
.05	.136	.0976	.0109	.00786	.125	.0896	.599					128.	97.9	132.	128.	128.	97.9
.06	.132	.100	.0124	.00942	.120	.0908	.446					177.	132.	181.	177.	177.	132.
.08	.125	.102	.0146	.0119	.110	.0899	.272					157.	119.	161.	157.	157.	119.
K .080725	.125	.102	.0147	.0120	.110	.0899	.268					183.	138.	186.	183.	183.	138.
.1	.119	.102	.0164	.0140	.103	.0875	.181					163.	125.	166.	163.	163.	125.
.15	.107	.0982	.0194	.0178	.0878	.0804	.0853					76.1	62.7	78.3	76.1	76.1	62.7
.2	.0982	.0927	.0212	.0200	.0771	.0725	.0495					26.0	22.9	27.3	26.1	26.0	22.9
.3	.0853	.0826	.0230	.0223	.0624	.0602	.0225					12.0	10.9	12.9	12.0	12.0	10.9
.4	.0764	.0749	.0237	.0229	.0529	.0520	.0127					6.54	6.09	7.25	6.64	6.54	6.09
.5	.0697	.0688	.0238	.0232	.0459	.0456	.00826					3.94	3.70	4.50	4.04	3.94	3.70
.6	.0645	.0639	.0237	.0230	.0410	.0410	.00572					1.76	1.68	2.13	1.86	1.78	1.70
.8	.0569	.0563	.0232	.0224	.0336	.0339	.00324					1.71	1.64	2.08	1.81	1.73	1.65
1.	.0511	.0508	.0224	.0211	.0286	.0296	.00209					4.47	2.67	8.84	8.56	8.47	2.68
1.5	.0416	.0413	.0205	.0194	.0209	.0219	.000936	.00150		.00150	.000453	4.83	2.16	5.11	4.92	4.86	2.17
2.	.0355	.0352	.0188	.0175	.0166	.0176	.000529	.00480		.00480	.00220	1.65	1.04	1.83	1.75	1.67	1.06
3.	.0278	.0278	.0160	.0144	.0117	.0134	.000236	.0111	.00000972	.0111	.00670	.771	.557	.911	.862	.792	.578
4.	.0232	.0232	.0141	.0122	.00914	.0110	.000134	.0164	.0000401	.0165	.0110	.266	.217	.370	.349	.289	.239
5.	.0201	.0201	.0126	.0105	.00746	.00954	.0000872	.0208	.0000786	.0209	.0145	.128	.110	.216	.203	.152	.133
6.	.0177	.0177	.0114	.00920	.00633	.00853	.0000599	.0243	.000121	.0244	.0174	.0740	.0657	.151	.143	.0979	.0890
8.	.0145	.0145	.00969	.00734	.00483	.00716	.0000339	.0298	.000205	.0301	.0216	.0483	.0437	.118	.112	.0722	.0667
10.	.0124	.0124	.00844	.00609	.00391	.00627	.0000222	.0352	.000283	.0355	.0251	.0254	.0236	.0850	.0816	.0486	.0459
15.	.00914	.00914	.00648	.00440	.00265	.00474	.0000095	.0450	.000437	.0453	.0302	.0161	.0152	.0691	.0670	.0385	.0364
20.	.00734	.00734	.00532	.00330	.00201	.00404	.0000044	.0529	.000550	.0535	.0330	.00765	.00737	.0514	.0505	.0297	.0272
30.	.00535	.00535	.00401	.00212	.00135	.00324		.0627	.000713	.0633	.0352	.00665	.00653	.0453	.0446	.0282	.0262
40.	.00425	.00425	.00324	.00150	.00102	.00275		.0700	.000832	.0709	.0349	.00251	.00246	.0416	.0413	.0296	.0235
50.	.00355	.00355	.00273	.00115	.000816	.00240		.0755	.000917	.0764	.0342	.00168	.00165	.0416	.0413	.0321	.0248
60.	.00305	.00305	.00237	.000893	.000682	.00216		.0795	.000988	.0804	.0336	.00123	.00122	.0422	.0422	.0349	.0263
80.	.00241	.00241	.00189	.000609	.000514	.00180		.0856	.00109	.0868	.0324	.000972	.000963	.0431	.0431	.0367	.0275
100.	.00200	.00200	.00159	.000446	.000413	.00155		.0899	.00117	.0911	.0309	.000673	.000667	.0453	.0453	.0404	.0296
												.000514	.000511	.0483	.0483	.0443	.0318
												.000318	.000318	.0547	.0547	.0520	.0349
												.000231	.000231	.0612	.0612	.0590	.0367
												.000147	.000147	.0688	.0688	.0676	.0373
												.000107	.000107	.0752	.0752	.0743	.0364
												.0000835	.0000835	.0801	.0801	.0792	.0355
												.0000682	.0000682	.0835	.0835	.0829	.0346
												.0000498	.0000498	.0893	.0893	.0887	.0330
												.0000391	.0000391	.0933	.0933	.0927	.0315

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(barns/atom)

E (MeV)	$\sigma^{KN}_{inc,t}$	$\sigma^{BD}_{inc,t}$	$\sigma^{KN}_{inc,a}$	$\sigma^{BD}_{inc,a}$	$\sigma^{KN}_{inc,s}$	$\sigma^{BD}_{inc,s}$	σ_{coh}	$\sigma_{\gamma n}$	$\sigma_{\gamma e}$	$\sigma_{\gamma,t}$	$\sigma_{\gamma,a}$	$\sigma_{\gamma,t}$	$\sigma_{\gamma,a}$	$\sigma_{tot,t}$	$\sigma_{tot,t-coh}$	$\sigma_{tot,a}$	$\sigma_{tot,en}$
.001	53.0	1.19	.103	.00232	52.9	1.19	4090.					2050000.	2050000.	2050000.	2050000.	2050000.	2050000.
.0015	52.9	2.15	.154	.00627	52.8	2.14	3950.					839000.	839000.	839000.	839000.	839000.	839000.
.002	52.8	3.11	.205	.0121	52.6	3.10	3770.					445000.	445000.	449000.	445000.	445000.	445000.
M_V .002295	52.7	3.66	.235	.0163	52.5	3.64	3660.					328000.	328000.	332000.	328000.	328000.	328000.
												1030000.	1030000.	1030000.	1030000.	1030000.	1030000.
M_{IV} .002385	52.7	3.83	.244	.0177	52.5	3.81	3630.					946000.	946000.	950000.	946000.	946000.	946000.
												1070000.	1070000.	1070000.	1070000.	1070000.	1070000.
M_{III} .002847	52.6	4.67	.290	.0257	52.3	4.64	3450.					659000.	659000.	662000.	659000.	659000.	659000.
												759000.	759000.	762000.	759000.	759000.	759000.
.003	52.6	4.94	.305	.0286	52.3	4.91	3400.					667000.	667000.	670000.	667000.	667000.	667000.
M_{II} .003280	52.5	5.44	.333	.0344	52.2	5.41	3290.					532000.	532000.	535000.	532000.	532000.	532000.
												633000.	633000.	636000.	633000.	633000.	633000.
M_I .003562	52.5	5.93	.360	.0407	52.1	5.89	3190.					510000.	510000.	513000.	510000.	510000.	510000.
												589000.	589000.	592000.	589000.	589000.	589000.
.004	52.4	6.69	.403	.0515	52.0	6.64	3030.					436000.	436000.	439000.	436000.	436000.	436000.
.005	52.2	8.36	.500	.0801	51.7	8.28	2700.					242000.	242000.	245000.	242000.	242000.	242000.
.006	52.0	9.95	.595	.114	51.4	9.84	2420.					149000.	149000.	151000.	149000.	149000.	149000.
.008	51.6	12.9	.781	.195	50.8	12.7	1960.					69500.	69500.	71500.	69500.	69500.	69500.
.01	51.2	15.4	.960	.289	50.3	15.1	1630.					38400.	38400.	40000.	38400.	38400.	38400.
L_{III} .012283	50.8	17.8	1.16	.406	49.6	17.4	1330.					22100.	22100.	23400.	22100.	22100.	22100.
												58200.	42000.	59500.	58200.	58200.	42000.
L_{II} .014209	50.5	19.5	1.32	.511	49.1	19.0	1140.					40100.	30400.	41300.	40100.	40100.	30400.
												55500.	41300.	56700.	55500.	55500.	41300.
L_I .014842	50.3	20.0	1.37	.546	49.0	19.5	1080.					49300.	37200.	50400.	49300.	49300.	37200.
												57300.	43100.	58400.	57300.	57300.	43100.
.015	50.3	20.1	1.39	.556	48.9	19.5	1070.					55800.	42100.	56900.	55800.	55800.	42100.
.02	49.4	23.5	1.78	.848	47.7	22.7	748.					26100.	21300.	26900.	26100.	26100.	21300.
.03	47.8	28.0	2.49	1.46	45.3	26.5	436.					8940.	7840.	9400.	8970.	8940.	7840.
.04	46.3	30.7	3.09	2.05	43.2	28.7	287.					4100.	3720.	4420.	4130.	4100.	3720.
.05	44.9	32.2	3.62	2.60	41.3	29.6	202.					2260.	2090.	2490.	2290.	2260.	2090.
.06	43.6	33.1	4.10	3.11	39.6	30.0	151.					1360.	1280.	1540.	1390.	1360.	1280.
.08	41.4	33.7	4.85	3.95	36.5	29.8	92.0					608.	580.	734.	642.	613.	584.
K .083102	41.1	33.7	4.95	4.06	36.1	29.6	85.7					546.	522.	665.	580.	551.	526.
												2680.	844.	2800.	2710.	2680.	848.
.1	39.4	33.6	5.44	4.64	34.0	29.0	61.0					1650.	711.	1740.	1680.	1660.	716.
.15	35.5	32.5	6.44	5.90	29.0	26.6	28.8					567.	352.	628.	599.	573.	358.
.2	32.5	30.6	7.03	6.62	25.5	24.0	16.7					265.	190.	312.	296.	272.	197.
.3	28.3	27.3	7.62	7.36	20.7	19.9	7.60					91.5	74.1	126.	119.	99.1	81.5
.4	25.3	24.8	7.85	7.59	17.5	17.2	4.30					44.0	37.7	73.1	68.8	51.8	45.3
.5	23.1	22.8	7.89	7.68	15.2	15.1	2.79					25.6	22.7	51.2	48.4	33.5	30.4
.6	21.4	21.1	7.86	7.60	13.5	13.5	1.93					16.6	15.0	39.6	37.7	24.5	22.6
.8	18.8	18.7	7.68	7.44	11.1	11.3	1.09					8.80	8.17	28.6	27.5	16.5	15.6
1.	16.9	16.8	7.43	6.99	9.46	9.81	.703					5.56	5.24	23.1	22.4	13.0	12.2
1.5	13.7	13.7	6.79	6.44	6.94	7.26	.317	.510		.510	.155	2.66	2.56	17.2	16.9	9.96	9.15
2.	11.7	11.7	6.21	5.83	5.49	5.87	.179	1.63		1.63	.747	1.61	1.56	15.1	14.9	9.45	8.14
3.	9.21	9.20	5.31	4.76	3.89	4.44	.0800	3.73	.00322	3.73	2.25	.870	.853	13.9	13.8	9.91	7.86
4.	7.70	7.70	4.67	4.03	3.03	3.67	.0452	5.50	.0132	5.51	3.67	.579	.571	13.8	13.8	10.8	8.27
5.	6.65	6.65	4.17	3.48	2.47	3.17	.0294	6.97	.0260	7.00	4.87	.426	.421	14.1	14.1	11.6	8.77
6.	5.87	5.87	3.78	3.04	2.09	2.83	.0203	8.13	.0401	8.17	5.80	.338	.335	14.4	14.4	12.3	9.17
8.	4.80	4.80	3.21	2.42	1.60	2.38	.0114	10.0	.0676	10.1	7.21	.232	.230	15.1	15.1	13.5	9.86
10.	4.09	4.09	2.80	2.01	1.30	2.08	.00748	11.8	.0937	11.9	8.40	.177	.176	16.2	16.2	14.9	10.6
15.	3.03	3.03	2.15	1.45	.878	1.58	.00324	15.1	.145	15.2	10.1	.110	.110	18.3	18.3	17.5	11.7
20.	2.43	2.43	1.77	1.09	.665	1.34	.00151	17.7	.182	17.9	11.0	.0798	.0796	20.4	20.4	19.7	12.2
30.	1.77	1.77	1.32	.699	.447	1.07		21.0	.236	21.2	11.7	.0509	.0508	23.0	23.0	22.6	12.4
40.	1.41	1.41	1.07	.496	.338	.914		23.4	.275	23.7	11.5	.0370	.0369	25.1	25.1	24.8	12.0
50.	1.17	1.17	.904	.377	.270	.793		25.2	.304	25.5	11.4	.0290	.0290	26.7	26.7	26.4	11.8
60.	1.01	1.01	.785	.294	.226	.716		26.6	.326	26.9	11.2	.0237	.0237	27.9	27.9	27.7	11.5
80.	.798	.798	.627	.201	.170	.597		28.6	.362	29.0	10.8	.0173	.0173	29.8	29.8	29.6	11.0
100.	.662	.662	.526	.148	.137	.514		30.0	.388	30.4	10.2	.0135	.0135	31.1	31.1	30.9	10.4

80 MERCURY

(cm²/g = 0.003002 x barns/atom)

E (MeV)	$(\frac{\mu}{\rho})^{KN}_{inc,t}$	$(\frac{\mu}{\rho})^{BD}_{inc,t}$	$(\frac{\mu}{\rho})^{KN}_{inc,a}$	$(\frac{\mu}{\rho})^{BD}_{inc,a}$	$(\frac{\mu}{\rho})^{KN}_{inc,s}$	$(\frac{\mu}{\rho})^{BD}_{inc,s}$	$(\frac{\mu}{\rho})_{coh}$	$(\frac{\mu}{\rho})_{\kappa_n}$	$(\frac{\mu}{\rho})_{\kappa_e}$	$(\frac{\mu}{\rho})_{\kappa,t}$	$(\frac{\mu}{\rho})_{\kappa,a}$	$(\frac{\mu}{\rho})_{\tau,t}$	$(\frac{\mu}{\rho})_{\tau,a}$	$(\frac{\mu}{\rho})_{tot,t}$	$(\frac{\mu}{\rho})_{tot,t-coh}$	$(\frac{\mu}{\rho})_{tot,a}$	$(\frac{\mu}{\rho})_{tot,en}$
.001	.159	.00357	.000309	.0000070	.159	.00357	12.3					6150.	6150.	6150.	6150.	6150.	6150.
.0015	.159	.00645	.000462	.0000188	.159	.00642	11.9					2520.	2520.	2530.	2520.	2520.	2520.
.002	.159	.00934	.000615	.0000363	.158	.00931	11.3					1340.	1340.	1350.	1340.	1340.	1340.
M_V .002295	.158	.0110	.000705	.0000489	.158	.0109	11.0					985.	985.	997.	985.	985.	985.
												3090.	3090.	3090.	3090.	3090.	3090.
M_{IV} .002385	.158	.0115	.000732	.0000531	.158	.0114	10.9					2840.	2840.	2850.	2840.	2840.	2840.
												3210.	3210.	3210.	3210.	3210.	3210.
M_{III} .002847	.158	.0140	.000871	.0000772	.157	.0139	10.4					1980.	1980.	1990.	1980.	1980.	1980.
												2280.	2280.	2290.	2280.	2280.	2280.
.003	.158	.0148	.000916	.0000859	.157	.0147	10.2					2000.	2000.	2010.	2000.	2000.	2000.
M_{II} .00328	.158	.0163	.00100	.000103	.157	.0162	9.88					1600.	1600.	1610.	1600.	1600.	1600.
												1900.	1900.	1910.	1900.	1900.	1900.
M_I .003562	.158	.0178	.00108	.000122	.156	.0177	9.58					1530.	1530.	1540.	1530.	1530.	1530.
												1770.	1770.	1780.	1770.	1770.	1770.
.004	.157	.0201	.00121	.000155	.156	.0199	9.10					1310.	1310.	1320.	1310.	1310.	1310.
.005	.157	.0251	.00150	.000240	.155	.0249	8.11					726.	726.	735.	726.	726.	726.
.006	.156	.0299	.00179	.000342	.154	.0295	7.26					447.	447.	453.	447.	447.	447.
.008	.155	.0387	.00234	.000585	.153	.0381	5.88					209.	209.	215.	209.	209.	209.
.01	.154	.0462	.00288	.000868	.151	.0453	4.89					115.	115.	120.	115.	115.	115.
L_{III} .012283	.153	.0534	.00348	.00122	.149	.0522	3.99					66.3	66.3	70.2	66.3	66.3	66.3
												175.	126.	179.	175.	175.	126.
L_{II} .014209	.152	.0585	.00396	.00153	.147	.0570	3.42					120.	91.3	124.	120.	120.	91.3
												167.	124.	170.	167.	167.	124.
L_I .014842	.151	.0600	.00411	.00164	.147	.0585	3.24					148.	112.	151.	148.	148.	112.
												172.	129.	175.	172.	172.	129.
.015	.151	.0603	.00417	.00167	.147	.0585	3.21					168.	126.	171.	168.	168.	126.
.02	.148	.0705	.00534	.00255	.143	.0681	2.25					78.4	63.9	80.8	78.4	78.4	63.9
.03	.143	.0841	.00747	.00438	.136	.0796	1.31					26.8	23.5	28.2	26.9	26.8	23.5
.04	.139	.0922	.00928	.00615	.130	.0862	.862					12.3	11.2	13.3	12.4	12.3	11.2
.05	.135	.0967	.0109	.00781	.124	.0889	.606					6.78	6.27	7.47	6.87	6.78	6.27
.06	.131	.0994	.0123	.00934	.119	.0901	.453					4.08	3.84	4.62	4.17	4.08	3.84
.08	.124	.101	.0146	.0119	.110	.0895	.276					1.83	1.74	2.20	1.93	1.84	1.75
K .083102	.123	.101	.0149	.0122	.108	.0889	.257					1.64	1.57	2.00	1.74	1.65	1.58
												8.05	2.53	8.41	8.14	8.05	2.55
.1	.118	.101	.0163	.0139	.102	.0871	.183					4.95	2.13	5.22	5.04	4.98	2.15
.15	.107	.0976	.0193	.0177	.0871	.0799	.0865					1.70	1.06	1.89	1.80	1.72	1.07
.2	.0976	.0919	.0211	.0199	.0766	.0720	.0561					.796	.570	.937	.889	.817	.591
.3	.0850	.0820	.0229	.0221	.0621	.0597	.0228					.275	.222	.378	.357	.297	.245
.4	.0760	.0744	.0236	.0228	.0525	.0516	.0129					.132	.113	.219	.207	.156	.136
.5	.0693	.0684	.0237	.0231	.0456	.0453	.00838					.0769	.0681	.154	.145	.101	.0913
.6	.0642	.0633	.0236	.0228	.0405	.0405	.00579					.0498	.0450	.119	.113	.0735	.0678
.8	.0564	.0561	.0231	.0223	.0333	.0339	.00327					.0264	.0245	.0859	.0826	.0495	.0468
1.	.0507	.0504	.0223	.0210	.0284	.0294	.00211					.0167	.0157	.0693	.0672	.0390	.0366
1.5	.0411	.0411	.0204	.0193	.0208	.0218	.000952	.00153		.00153	.000465	.00799	.00769	.0516	.0507	.0299	.0275
2.	.0351	.0351	.0186	.0175	.0165	.0176	.000537	.00489		.00489	.00224	.00483	.00468	.0453	.0447	.0284	.0244
3.	.0276	.0276	.0159	.0143	.0117	.0133	.000240	.0112	.00000967	.0112	.00675	.00261	.00256	.0417	.0414	.0297	.0236
4.	.0231	.0231	.0140	.0121	.00910	.0110	.000136	.0165	.0000396	.0165	.0110	.00174	.00171	.0414	.0414	.0324	.0248
5.	.0200	.0200	.0125	.0104	.00741	.00952	.0000883	.0209	.0000781	.0210	.0146	.00128	.00126	.0423	.0423	.0348	.0263
6.	.0176	.0176	.0113	.00913	.00627	.00850	.0000609	.0244	.000120	.0245	.0174	.00101	.00101	.0432	.0432	.0369	.0275
8.	.0144	.0144	.00964	.00726	.00480	.00714	.0000342	.0300	.000203	.0303	.0216	.000696	.000690	.0453	.0453	.0405	.0296
10.	.0123	.0123	.00841	.00603	.00390	.00624	.0000225	.0354	.000281	.0357	.0252	.000531	.000528	.0486	.0486	.0447	.0314
15.	.00910	.00910	.00645	.00435	.00264	.00474	.0000097	.0453	.000435	.0456	.0303	.000330	.000330	.0549	.0549	.0525	.0351
20.	.00729	.00729	.00531	.00327	.00200	.00402	.0000045	.0531	.000546	.0537	.0330	.000240	.000239	.0612	.0612	.0591	.0366
30.	.00531	.00531	.00396	.00210	.00134	.00321		.0630	.000708	.0636	.0351	.000153	.000153	.0690	.0690	.0678	.0372
40.	.00423	.00423	.00321	.00149	.00101	.00274		.0702	.000826	.0711	.0345	.000111	.000111	.0754	.0754	.0744	.0360
50.	.00351	.00351	.00271	.00113	.000811	.00238		.0757	.000913	.0766	.0342	.0000871	.0000871	.0802	.0802	.0793	.0354
60.	.00303	.00303	.00236	.000883	.000678	.00215		.0799	.000979	.0808	.0336	.0000711	.0000711	.0838	.0838	.0832	.0345
80.	.00240	.00240	.00188	.000603	.000510	.00179		.0859	.00109	.0871	.0324	.0000519	.0000519	.0895	.0895	.0889	.0330
100.	.00199	.00199	.00158	.000444	.000411	.00154		.0901	.00116	.0913	.0306	.0000405	.0000405	.0934	.0934	.0928	.0312

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(barns/atom)

E (MeV)	$\sigma^{KN}_{inc,t}$	$\sigma^{BD}_{inc,t}$	$\sigma^{KN}_{inc,a}$	$\sigma^{BD}_{inc,a}$	$\sigma^{KN}_{inc,s}$	$\sigma^{BD}_{inc,s}$	σ_{coh}	$\sigma_{\pi n}$	$\sigma_{\pi e}$	$\sigma_{\pi,t}$	$\sigma_{\pi,a}$	$\sigma_{\gamma,t}$	$\sigma_{\gamma,a}$	$\sigma_{tot,t}$	$\sigma_{tot,t-coh}$	$\sigma_{tot,a}$	$\sigma_{tot,en}$
.001	53.7	1.20	.105	.00234	53.6	1.20	4180.					2150000.	2150000.	2150000.	2150000.	2150000.	2150000.
.0015	53.6	2.20	.156	.00642	53.4	2.19	4030.					878000.	878000.	882000.	878000.	878000.	878000.
.002	53.5	3.20	.207	.0124	53.2	3.19	3850.					464000.	464000.	468000.	464000.	464000.	464000.
M_V .002389	53.4	3.94	.247	.0182	53.1	3.92	3700.					313000.	313000.	317000.	313000.	313000.	313000.
M_{IV} .002485	53.4	4.11	.257	.0198	53.1	4.09	3660.					980000.	980000.	984000.	980000.	980000.	980000.
M_{III} .002956	53.3	4.98	.304	.0284	53.0	4.95	3480.					901000.	901000.	905000.	901000.	901000.	901000.
.003	53.3	5.06	.309	.0293	52.9	5.03	3460.					1020000.	1020000.	1020000.	1020000.	1020000.	1020000.
M_{II} .003416	53.2	5.81	.350	.0383	52.8	5.77	3310.					632000.	632000.	635000.	632000.	632000.	632000.
M_I .003704	53.1	6.32	.379	.0451	52.7	6.27	3200.					727000.	727000.	730000.	727000.	727000.	727000.
.004	53.1	6.84	.408	.0526	52.6	6.79	3100.					700000.	700000.	703000.	700000.	700000.	700000.
.005	52.9	8.51	.506	.0815	52.3	8.43	2770.					507000.	507000.	510000.	507000.	507000.	507000.
.006	52.6	10.1	.603	.116	52.1	9.98	2480.					603000.	603000.	606000.	603000.	603000.	603000.
.008	52.3	13.0	.791	.197	51.5	12.8	2010.					488000.	488000.	491000.	488000.	488000.	488000.
.01	51.9	15.6	.972	.292	50.9	15.3	1670.					561000.	561000.	564000.	561000.	561000.	561000.
L_{III} .012656	51.4	18.3	1.21	.430	50.2	17.9	1330.					456000.	456000.	459000.	456000.	456000.	456000.
L_{II} .014697	51.0	20.1	1.38	.544	49.6	19.6	1120.					255000.	255000.	258000.	255000.	255000.	255000.
.015	50.9	20.3	1.41	.561	49.5	19.7	1100.					158000.	158000.	160000.	158000.	158000.	158000.
L_I .015346	50.9	20.6	1.43	.581	49.4	20.0	1070.					73300.	73300.	75300.	73300.	73300.	73300.
.02	50.0	23.7	1.81	.855	48.3	22.8	770.					40500.	40500.	42200.	40500.	40500.	40500.
.03	48.4	28.3	2.52	1.47	45.9	26.8	449.					21500.	21500.	22800.	21500.	21500.	21500.
.04	46.9	31.0	3.13	2.07	43.7	28.9	296.					56200.	40300.	57500.	56200.	56200.	40300.
.05	45.5	32.6	3.67	2.63	41.8	30.0	209.					38500.	29100.	39600.	38500.	38500.	29100.
.06	44.2	33.4	4.15	3.13	40.1	30.3	155.					53100.	39300.	54200.	53100.	53100.	39300.
.08	41.9	34.0	4.91	3.98	37.0	30.0	94.9					49900.	37200.	51000.	49900.	49900.	37200.
K .085530	41.3	34.0	5.09	4.19	36.2	29.8	83.8					47300.	35600.	48400.	47300.	47300.	35600.
.1	39.9	33.9	5.51	4.68	34.4	29.2	63.0					55000.	41200.	56100.	55000.	55000.	41200.
.15	35.9	32.9	6.52	5.97	29.4	26.9	29.7					27400.	22100.	28200.	27400.	27400.	22100.
.2	32.9	31.0	7.12	6.70	25.8	24.3	17.2					9370.	8170.	9850.	9400.	9370.	8170.
.3	28.6	27.7	7.72	7.47	20.9	20.2	7.84					4300.	3890.	4630.	4330.	4300.	3890.
.4	25.6	25.1	7.95	7.66	17.7	17.4	4.44					2360.	2180.	2600.	2390.	2360.	2180.
.5	23.4	23.1	7.99	7.76	15.4	15.3	2.87					1430.	1340.	1620.	1460.	1430.	1340.
.6	21.7	21.4	7.96	7.70	13.7	13.7	1.99					643.	612.	772.	677.	648.	616.
.8	19.0	18.9	7.78	7.50	11.3	11.4	1.12					532.	508.	650.	566.	537.	512.
1.	17.1	17.0	7.52	7.07	9.58	9.93	.728					2590.	816.	2710.	2620.	2600.	820.
1.5	13.9	13.9	6.88	6.53	7.02	7.37	.327	.527		.527	.160	1720.	712.	1820.	1750.	1730.	717.
2.	11.9	11.8	6.29	5.86	5.56	5.94	.185	1.67		1.67	.765	593.	361.	656.	626.	600.	367.
3.	9.32	9.31	5.38	4.81	3.94	4.50	.0820	3.84	.00326	3.84	2.32	278.	197.	326.	309.	285.	204.
4.	7.79	7.79	4.73	4.07	3.06	3.72	.0467	5.63	.0134	5.64	3.75	95.8	77.1	131.	123.	104.	84.6
5.	6.73	6.73	4.23	3.51	2.50	3.22	.0304	7.15	.0262	7.18	4.99	46.3	39.5	75.8	71.4	54.2	47.2
6.	5.95	5.95	3.83	3.08	2.12	2.87	.0209	8.31	.0406	8.35	5.92	26.9	23.7	52.9	50.0	34.9	31.5
8.	4.86	4.86	3.25	2.44	1.62	2.42	.0118	10.2	.0683	10.3	7.34	17.5	15.8	40.9	38.9	25.5	23.5
10.	4.14	4.14	2.83	2.02	1.31	2.12	.0077	12.0	.0950	12.1	8.53	9.30	8.62	29.3	28.2	17.1	16.1
15.	3.07	3.07	2.18	1.47	.889	1.60	.00337	15.4	.146	15.5	10.3	5.90	5.58	23.6	22.9	13.4	12.6
20.	2.46	2.46	1.79	1.10	.673	1.36	.00157	18.0	.184	18.2	11.2	2.80	2.69	17.6	17.2	10.2	9.38
30.	1.79	1.79	1.34	.705	.453	1.08		21.4	.239	21.6	11.9	1.70	1.65	15.4	15.2	9.66	8.27
40.	1.42	1.42	1.08	.498	.342	.922		24.0	.278	24.3	11.7	.914	.896	14.1	14.1	10.1	8.03
50.	1.19	1.19	.915	.382	.274	.808		25.8	.307	26.1	11.6	.610	.601	14.1	14.0	11.0	8.42
60.	1.02	1.02	.795	.297	.229	.723		27.2	.330	27.5	11.4	.450	.445	14.4	14.4	11.9	8.94
80.	.808	.808	.635	.203	.172	.606		29.3	.366	29.7	11.0	.354	.351	14.7	14.7	12.5	9.35
100.	.671	.671	.532	.150	.138	.521		30.8	.393	31.2	10.4	.244	.242	15.4	15.4	13.8	10.0
												.186	.185	16.4	16.4	15.1	10.7
												.116	.116	18.7	18.7	17.8	11.9
												.0838	.0836	20.7	20.7	20.1	12.4
												.0537	.0536	23.4	23.4	23.0	12.7
												.0390	.0389	25.8	25.8	25.4	12.2
												.0305	.0305	27.3	27.3	27.0	12.0
												.0250	.0250	28.5	28.5	28.3	11.7
												.0182	.0182	30.5	30.5	30.4	11.2
												.0142	.0142	31.9	31.9	31.7	10.6

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(cm^2/g = 0.002947 × barns/atom)

E (MeV)	$(\frac{\mu}{\rho})^{KN}_{inc,t}$	$(\frac{\mu}{\rho})^{BD}_{inc,t}$	$(\frac{\mu}{\rho})^{KN}_{inc,a}$	$(\frac{\mu}{\rho})^{BD}_{inc,a}$	$(\frac{\mu}{\rho})^{KN}_{inc,s}$	$(\frac{\mu}{\rho})^{BD}_{inc,s}$	$(\frac{\mu}{\rho})_{coh}$	$(\frac{\mu}{\rho})_{\kappa_n}$	$(\frac{\mu}{\rho})_{\kappa_e}$	$(\frac{\mu}{\rho})_{\kappa,t}$	$(\frac{\mu}{\rho})_{\kappa,a}$	$(\frac{\mu}{\rho})_{\tau,t}$	$(\frac{\mu}{\rho})_{\tau,a}$	$(\frac{\mu}{\rho})_{tot,t}$	$(\frac{\mu}{\rho})_{tot,t-coh}$	$(\frac{\mu}{\rho})_{tot,a}$	$(\frac{\mu}{\rho})_{tot,en}$
.001	.158	.00354	.000309	.0000069	.158	.00354	12.3					6340.	6340.	6340.	6340.	6340.	6340.
.0015	.158	.00648	.000460	.0000189	.157	.00645	11.9					2590.	2590.	2600.	2590.	2590.	2590.
.002	.158	.00943	.000610	.0000365	.157	.00940	11.3					1370.	1370.	1380.	1370.	1370.	1370.
M_V .002389	.157	.0116	.000728	.0000536	.156	.0116	10.9					922.	922.	934.	922.	922.	922.
M_{IV} .002485	.157	.0121	.000757	.0000584	.156	.0121	10.8					2890.	2890.	2900.	2890.	2890.	2890.
M_{III} .002956	.157	.0147	.000896	.0000837	.156	.0146	10.3					2660.	2660.	2670.	2660.	2660.	2660.
.003	.157	.0149	.000911	.0000863	.156	.0148	10.2					3010.	3010.	3010.	3010.	3010.	3010.
M_{II} .003416	.157	.0171	.00103	.000113	.156	.0170	9.75					1860.	1860.	1870.	1860.	1860.	1860.
M_I .003704	.156	.0186	.00112	.000133	.155	.0185	9.43					2140.	2140.	2150.	2140.	2140.	2140.
.004	.156	.0202	.00120	.000155	.155	.0200	9.14					2060.	2060.	2070.	2060.	2060.	2060.
.005	.156	.0251	.00149	.000240	.154	.0248	8.16					1490.	1490.	1500.	1490.	1490.	1490.
.006	.155	.0298	.00178	.000342	.154	.0294	7.31					1780.	1780.	1790.	1780.	1780.	1780.
.008	.154	.0383	.00233	.000581	.152	.0377	5.92					1440.	1440.	1450.	1440.	1440.	1440.
.01	.153	.0460	.00286	.000861	.150	.0451	4.92					1650.	1650.	1660.	1650.	1650.	1650.
L_{III} .012656	.151	.0539	.00357	.00127	.148	.0528	3.92					1340.	1340.	1350.	1340.	1340.	1340.
L_{II} .014697	.150	.0592	.00407	.00160	.146	.0578	3.30					751.	751.	760.	751.	751.	751.
.015	.150	.0598	.00416	.00165	.146	.0581	3.24					466.	466.	472.	466.	466.	466.
L_I .015346	.150	.0607	.00421	.00171	.146	.0589	3.15					216.	216.	222.	216.	216.	216.
.02	.147	.0698	.00533	.00252	.142	.0672	2.27					119.	119.	124.	119.	119.	119.
.03	.143	.0834	.00743	.00433	.135	.0790	1.32					63.4	63.4	67.2	63.4	63.4	63.4
.04	.138	.0914	.00922	.00610	.129	.0852	.872					166.	119.	169.	166.	166.	119.
.05	.134	.0961	.0108	.00775	.123	.0884	.616					113.	85.8	117.	113.	113.	85.8
.06	.130	.0984	.0122	.00922	.118	.0893	.457					156.	116.	160.	156.	156.	116.
.08	.123	.100	.0145	.0117	.109	.0884	.280					147.	110.	150.	147.	147.	110.
K .085530	.122	.100	.0150	.0123	.107	.0878	.247					139.	105.	143.	139.	139.	105.
.1	.118	.0999	.0162	.0138	.101	.0861	.186					162.	121.	165.	162.	162.	121.
.15	.106	.0970	.0192	.0176	.0866	.0793	.0875					80.7	65.1	83.1	80.7	80.7	65.1
.2	.0970	.0914	.0210	.0197	.0760	.0716	.0507					27.6	24.1	29.0	27.7	27.6	24.1
.3	.0843	.0816	.0228	.0220	.0616	.0595	.0231					12.7	11.5	13.6	12.8	12.7	11.5
.4	.0754	.0740	.0234	.0226	.0522	.0513	.0131					6.95	6.42	7.66	7.04	6.95	6.42
.5	.0690	.0681	.0235	.0229	.0454	.0451	.00846					4.21	3.95	4.77	4.30	4.21	3.95
.6	.0639	.0631	.0235	.0227	.0404	.0404	.00586					1.89	1.80	2.28	2.00	1.91	1.82
.8	.0560	.0557	.0229	.0221	.0333	.0336	.00330					1.57	1.50	1.92	1.67	1.58	1.51
1.	.0504	.0501	.0222	.0208	.0282	.0293	.00215					7.63	2.40	7.99	7.72	7.66	2.42
1.5	.0410	.0410	.0203	.0192	.0207	.0217	.000964	.00155		.00155	.000472	5.07	2.10	5.36	5.16	5.10	2.11
2.	.0351	.0348	.0185	.0173	.0164	.0175	.000545	.00492		.00492	.00225	1.75	1.06	1.93	1.84	1.77	1.08
3.	.0275	.0274	.0159	.0142	.0116	.0133	.000242	.0113	.00000961	.0113	.00684	.819	.581	.961	.911	.840	.601
4.	.0230	.0230	.0139	.0120	.00902	.0110	.000138	.0166	.0000395	.0166	.0111	.282	.227	.386	.362	.306	.249
5.	.0198	.0198	.0125	.0103	.00737	.00949	.0000896	.0211	.0000772	.0212	.0147	.136	.116	.223	.210	.160	.139
6.	.0175	.0175	.0113	.00908	.00625	.00846	.0000616	.0245	.000120	.0246	.0174	.0793	.0698	.156	.147	.103	.0928
8.	.0143	.0143	.00958	.00719	.00477	.00713	.0000348	.0301	.000201	.0304	.0216	.0516	.0466	.121	.115	.0751	.0693
10.	.0122	.0122	.00834	.00595	.00386	.00625	.0000227	.0354	.000280	.0357	.0251	.0274	.0254	.0863	.0831	.0504	.0474
15.	.00905	.00905	.00642	.00433	.00262	.00472	.0000099	.0454	.000430	.0457	.0304	.0174	.0164	.0695	.0675	.0395	.0371
20.	.00725	.00725	.00528	.00324	.00198	.00401	.0000046	.0530	.000542	.0536	.0330	.00825	.00793	.0519	.0507	.0301	.0276
30.	.00528	.00528	.00395	.00208	.00133	.00318		.0631	.000704	.0637	.0351	.00501	.00486	.0454	.0448	.0285	.0244
40.	.00418	.00418	.00318	.00147	.00101	.00272		.0707	.000819	.0716	.0345	.00269	.00264	.0416	.0416	.0298	.0237
50.	.00351	.00351	.00270	.00113	.000807	.00238		.0760	.000905	.0769	.0342	.00180	.00177	.0416	.0413	.0324	.0248
60.	.00301	.00301	.00234	.000875	.000675	.00213		.0802	.000973	.0810	.0336	.00133	.00131	.0424	.0424	.0351	.0263
80.	.00238	.00238	.00187	.000598	.000507	.00178		.0863	.00108	.0875	.0324	.00104	.00103	.0433	.0433	.0368	.0276
100.	.00198	.00198	.00157	.000442	.000407	.00154		.0908	.00116	.0919	.0306	.000719	.000713	.0454	.0454	.0407	.0295
												.000548	.000545	.0483	.0483	.0445	.0315
												.000342	.000342	.0551	.0551	.0525	.0351
												.000247	.000246	.0610	.0610	.0592	.0365
												.000158	.000158	.0690	.0690	.0678	.0374
												.000115	.000115	.0760	.0760	.0749	.0360
												.0000899	.0000899	.0805	.0805	.0796	.0354
												.0000737	.0000737	.0840	.0840	.0834	.0345
												.0000536	.0000536	.0899	.0899	.0896	.0330
												.0000418	.0000418	.0940	.0940	.0934	.0312

82 LEAD
(barns/atom)

E (MeV)	$\sigma^{KN}_{inc,t}$	$\sigma^{BD}_{inc,t}$	$\sigma^{KN}_{inc,a}$	$\sigma^{BD}_{inc,a}$	$\sigma^{KN}_{inc,s}$	$\sigma^{BD}_{inc,s}$	σ_{coh}	σ_{κ_n}	σ_{κ_e}	$\sigma_{\kappa,t}$	$\sigma_{\kappa,a}$	$\sigma_{\gamma,t}$	$\sigma_{\gamma,a}$	$\sigma_{tot,t}$	$\sigma_{tot,t-coh}$	$\sigma_{tot,a}$	$\sigma_{tot,cn}$
.001	54.3	1.22	.106	.00238	54.2	1.22	4280.					2240000.	2240000.	2240000.	2240000.	2240000.	2240000.
.0015	54.2	2.24	.158	.00653	54.1	2.23	4120.					921000.	921000.	925000.	921000.	921000.	921000.
.002	54.1	3.27	.210	.0127	53.9	3.26	3930.					483000.	483000.	487000.	483000.	483000.	483000.
M_V .002484	54.0	4.25	.260	.0204	53.8	4.23	3740.					299000.	299000.	303000.	299000.	299000.	299000.
M_{IV} .002586	54.0	4.44	.270	.0222	53.7	4.42	3700.					936000.	936000.	940000.	936000.	936000.	936000.
.003	53.9	5.23	.313	.0303	53.6	5.20	3530.					860000.	860000.	864000.	860000.	860000.	860000.
M_{III} .003066	53.9	5.35	.319	.0317	53.6	5.32	3510.					975000.	975000.	979000.	975000.	975000.	975000.
M_{II} .003554	53.8	6.23	.369	.0427	53.4	6.19	3320.					648000.	648000.	652000.	648000.	648000.	648000.
M_I .003851	53.7	6.76	.398	.0501	53.3	6.71	3220.					606000.	606000.	610000.	606000.	606000.	606000.
.004	53.7	7.02	.413	.0540	53.3	6.97	3160.					697000.	697000.	701000.	697000.	697000.	697000.
.005	53.5	8.69	.512	.0832	53.0	8.61	2830.					484000.	484000.	487000.	484000.	484000.	484000.
.006	53.3	10.3	.610	.118	52.7	10.2	2540.					576000.	576000.	579000.	576000.	576000.	576000.
.008	52.9	13.2	.801	.200	52.1	13.0	2060.					466000.	466000.	469000.	466000.	466000.	466000.
.01	52.5	15.7	.984	.294	51.5	15.4	1710.					535000.	535000.	538000.	535000.	535000.	535000.
L_{III} .013035	51.9	18.9	1.25	.457	50.7	18.4	1320.					482000.	482000.	485000.	482000.	482000.	482000.
.015	51.6	20.5	1.43	.567	50.2	19.9	1130.					268000.	268000.	271000.	268000.	268000.	268000.
L_{II} .015200	51.5	20.7	1.44	.578	50.1	20.1	1110.					166000.	166000.	169000.	166000.	166000.	166000.
L_I .015861	51.4	21.2	1.49	.616	49.9	20.6	1060.					77400.	77400.	79500.	77400.	77400.	77400.
.02	50.7	23.9	1.83	.863	48.8	23.0	793.					42800.	42800.	44500.	42800.	42800.	42800.
.03	49.0	28.5	2.55	1.48	46.5	27.0	462.					21000.	21000.	22300.	21000.	21000.	21000.
.04	47.4	31.3	3.17	2.09	44.3	29.2	305.					54300.	38700.	55600.	54300.	54300.	38700.
.05	46.0	32.9	3.71	2.65	42.3	30.2	215.					38000.	28500.	39200.	38000.	38000.	28500.
.06	44.7	33.8	4.20	3.17	40.5	30.6	160.					36900.	27800.	38000.	36900.	36900.	27800.
.08	42.4	34.4	4.97	4.03	37.4	30.4	97.9					50900.	37500.	52000.	50900.	50900.	37500.
K .088004	41.6	34.4	5.23	4.33	36.3	30.1	82.0					45400.	34000.	46500.	45400.	45400.	34000.
.1	40.4	34.3	5.58	4.73	34.8	29.6	65.0					52800.	39300.	53900.	52800.	52800.	39300.
.15	36.4	33.2	6.60	6.03	29.8	27.2	30.7					28600.	22800.	29400.	28600.	28600.	22800.
.2	33.3	31.4	7.21	6.79	26.1	24.6	17.8					9810.	8490.	10300.	9840.	9810.	8490.
.3	29.0	28.0	7.81	7.55	21.2	20.5	8.09					4540.	4080.	4880.	4570.	4540.	4080.
.4	26.0	25.4	8.04	7.75	17.9	17.7	4.58					2480.	2280.	2730.	2510.	2480.	2280.
.5	23.7	23.3	8.09	7.83	15.6	15.5	2.96					1510.	1410.	1700.	1540.	1510.	1410.
.6	21.9	21.7	8.06	7.81	13.9	13.9	2.05					678.	644.	810.	712.	683.	648.
.8	19.3	19.1	7.88	7.58	11.4	11.5	1.17					519.	495.	635.	553.	524.	499.
1.	17.3	17.2	7.62	7.14	9.70	10.1	.750					2510.	791.	2630.	2540.	2520.	795.
1.5	14.1	14.0	6.96	6.57	7.11	7.43	.338	.548		.548	.165	1800.	715.	1900.	1830.	1810.	720.
2.	12.0	12.0	6.37	5.96	5.63	6.04	.191	1.72		1.72	.788	620.	371.	684.	653.	627.	377.
3.	9.44	9.42	5.44	4.86	3.99	4.56	.0850	3.94	.00330	3.94	2.38	290.	203.	339.	321.	297.	210.
4.	7.89	7.89	4.79	4.11	3.10	3.78	.0481	5.78	.0136	5.79	3.85	99.5	79.5	136.	127.	107.	87.0
5.	6.81	6.81	4.28	3.55	2.53	3.26	.0314	7.30	.0266	7.33	5.09	48.4	41.1	78.4	73.8	56.4	48.8
6.	6.02	6.02	3.88	3.10	2.14	2.92	.0216	8.50	.0411	8.54	6.06	28.3	24.9	54.6	51.6	36.4	32.7
8.	4.92	4.92	3.29	2.47	1.64	2.45	.0122	10.4	.0692	10.5	7.48	18.5	16.6	42.3	40.2	26.6	24.4
10.	4.19	4.19	2.87	2.04	1.33	2.15	.00792	12.3	.0959	12.4	8.73	9.80	9.06	30.1	28.9	17.7	16.6
15.	3.10	3.10	2.20	1.48	.900	1.62	.00350	15.7	.148	15.8	10.4	6.20	5.83	24.1	23.4	13.8	13.0
20.	2.49	2.49	1.81	1.12	.681	1.37	.00163	18.5	.186	18.7	11.4	2.95	2.83	17.8	17.5	10.5	9.56
30.	1.81	1.81	1.36	.710	.458	1.10		21.9	.242	22.1	12.1	1.80	1.75	15.7	15.5	9.89	8.50
40.	1.44	1.44	1.10	.504	.346	.936		24.5	.281	24.8	11.9	.970	.951	14.4	14.3	10.3	8.19
50.	1.20	1.20	.927	.384	.277	.816		26.4	.311	26.7	11.8	.647	.637	14.4	14.3	11.2	8.60
60.	1.04	1.04	.805	.302	.232	.738		27.8	.334	28.1	11.6	.478	.472	14.6	14.6	12.1	9.11
80.	.818	.818	.643	.205	.175	.613		29.9	.370	30.3	11.2	.373	.369	15.0	14.9	12.8	9.53
100.	.679	.679	.539	.151	.140	.528		31.6	.398	32.0	10.6	.258	.256	15.7	15.7	14.0	10.2
												.196	.195	16.8	16.8	15.5	11.0
												.121	.121	19.0	19.0	18.1	12.0
												.0878	.0875	21.3	21.3	20.6	12.6
												.0561	.0560	24.0	24.0	23.5	12.9
												.0410	.0409	26.3	26.3	25.9	12.4
												.0321	.0321	27.9	27.9	27.7	12.2
												.0263	.0263	29.2	29.2	28.9	11.9
												.0192	.0192	31.1	31.1	31.0	11.4
												.0150	.0150	32.7	32.7	32.6	10.8

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(cm²/g = 0.002907 × barns/atom)

E (MeV)	$(\frac{\mu}{\rho})^{KN}_{inc,t}$	$(\frac{\mu}{\rho})^{BD}_{inc,t}$	$(\frac{\mu}{\rho})^{KN}_{inc,a}$	$(\frac{\mu}{\rho})^{BD}_{inc,a}$	$(\frac{\mu}{\rho})^{KN}_{inc,s}$	$(\frac{\mu}{\rho})^{BD}_{inc,s}$	$(\frac{\mu}{\rho})_{coh}$	$(\frac{\mu}{\rho})_{\kappa_n}$	$(\frac{\mu}{\rho})_{\kappa_e}$	$(\frac{\mu}{\rho})_{\kappa,t}$	$(\frac{\mu}{\rho})_{\kappa,a}$	$(\frac{\mu}{\rho})_{\tau,t}$	$(\frac{\mu}{\rho})_{\tau,a}$	$(\frac{\mu}{\rho})_{tot,t}$	$(\frac{\mu}{\rho})_{tot,t-coh}$	$(\frac{\mu}{\rho})_{tot,a}$	$(\frac{\mu}{\rho})_{tot,en}$
.001	.158	.00355	.000308	.0000069	.158	.00355	12.4					6510.	6510.	6510.	6510.	6510.	6510.
.0015	.158	.00651	.000459	.0000190	.157	.00648	12.0					2680.	2680.	2690.	2680.	2680.	2680.
.002	.157	.00951	.000610	.0000369	.157	.00948	11.4					1400.	1400.	1420.	1400.	1400.	1400.
M_V .002484	.157	.0124	.000756	.0000593	.156	.0123	10.9					869.	869.	881.	869.	869.	869.
M_{IV} .002586	.157	.0129	.000785	.0000645	.156	.0128	10.8					2720.	2720.	2730.	2720.	2720.	2720.
.003	.157	.0152	.000910	.0000881	.156	.0151	10.3					2500.	2500.	2510.	2500.	2500.	2500.
M_{III} .003066	.157	.0156	.000927	.0000922	.156	.0155	10.2					2830.	2830.	2850.	2830.	2830.	2830.
M_{II} .003554	.156	.0181	.00107	.000124	.155	.0180	9.65					1880.	1880.	1900.	1880.	1880.	1880.
M_I .003851	.156	.0197	.00116	.000146	.155	.0195	9.36					1760.	1760.	1770.	1760.	1760.	1760.
.004	.156	.0204	.00120	.000157	.155	.0203	9.19					2030.	2030.	2040.	2030.	2030.	2030.
.005	.156	.0253	.00149	.000242	.154	.0250	8.23					1410.	1410.	1420.	1410.	1410.	1410.
.006	.155	.0299	.00177	.000343	.153	.0297	7.38					1670.	1670.	1680.	1670.	1670.	1670.
.008	.154	.0384	.00233	.000581	.151	.0378	5.99					1350.	1350.	1360.	1350.	1350.	1350.
.01	.153	.0456	.00286	.000855	.150	.0448	4.97					1560.	1560.	1560.	1560.	1560.	1560.
L_{III} .013035	.151	.0549	.00363	.00133	.147	.0535	3.84					1400.	1400.	1410.	1400.	1400.	1400.
.015	.150	.0596	.00416	.00165	.146	.0578	3.28					779.	779.	788.	779.	779.	779.
L_{II} .015200	.150	.0602	.00419	.00168	.146	.0584	3.23					483.	483.	491.	483.	483.	483.
L_I .015861	.149	.0616	.00433	.00179	.145	.0599	3.08					225.	225.	231.	225.	225.	225.
.02	.147	.0695	.00532	.00251	.142	.0669	2.31					124.	124.	129.	124.	124.	124.
.03	.142	.0828	.00741	.00430	.135	.0785	1.34					61.0	61.0	64.8	61.0	61.0	61.0
.04	.138	.0910	.00922	.00608	.129	.0849	.887					158.	113.	162.	158.	158.	113.
.05	.134	.0956	.0108	.00770	.123	.0878	.625					110.	82.8	114.	110.	110.	82.8
.06	.130	.0983	.0122	.00922	.118	.0890	.465					107.	80.8	110.	107.	107.	80.8
.08	.123	.100	.0144	.0117	.109	.0884	.285					148.	109.	151.	148.	148.	109.
K .088004	.121	.100	.0152	.0126	.106	.0875	.238					132.	98.8	135.	132.	132.	98.8
.1	.117	.0997	.0162	.0138	.101	.0860	.189					153.	114.	157.	153.	153.	114.
.15	.106	.0965	.0192	.0175	.0866	.0791	.0892					83.1	66.3	85.5	83.1	83.1	66.3
.2	.0968	.0913	.0210	.0197	.0759	.0715	.0517					28.5	24.7	29.9	28.6	28.5	24.7
.3	.0843	.0814	.0227	.0219	.0616	.0596	.0235					13.2	11.9	14.2	13.3	13.2	11.9
.4	.0756	.0738	.0234	.0225	.0520	.0515	.0133					7.21	6.63	7.94	7.30	7.21	6.63
.5	.0689	.0677	.0235	.0228	.0453	.0451	.00860					4.39	4.10	4.94	4.48	4.39	4.10
.6	.0637	.0631	.0234	.0227	.0404	.0404	.00596					1.97	1.87	2.35	2.07	1.99	1.88
.8	.0561	.0555	.0229	.0220	.0331	.0334	.00340					1.51	1.44	1.85	1.61	1.52	1.45
1.	.0503	.0500	.0222	.0208	.0282	.0294	.00218					7.30	2.30	7.65	7.38	7.33	2.31
1.5	.0410	.0407	.0202	.0191	.0207	.0216	.000983	.00159		.00159	.000480	5.23	2.08	5.52	5.32	5.26	2.09
2.	.0349	.0349	.0185	.0173	.0164	.0176	.000555	.00500		.00500	.00229	1.80	1.08	1.99	1.90	1.82	1.10
3.	.0274	.0274	.0158	.0141	.0116	.0133	.000247	.0115	.00000959	.0115	.00692	.849	.590	.985	.933	.863	.610
4.	.0229	.0229	.0139	.0119	.00901	.0110	.000140	.0168	.0000395	.0168	.0112	.289	.231	.395	.369	.311	.253
5.	.0198	.0198	.0124	.0103	.00735	.00948	.0000913	.0212	.0000773	.0213	.0148	.141	.119	.228	.215	.164	.142
6.	.0175	.0175	.0113	.00901	.00622	.00849	.0000628	.0247	.000119	.0248	.0176	.0823	.0724	.159	.150	.106	.0951
8.	.0143	.0143	.00956	.00718	.00477	.00712	.0000355	.0302	.000201	.0305	.0217	.0538	.0483	.123	.117	.0773	.0709
10.	.0122	.0122	.00834	.00593	.00387	.00625	.0000230	.0358	.000279	.0360	.0254	.0285	.0263	.0875	.0840	.0515	.0483
15.	.00901	.00901	.00640	.00430	.00262	.00471	.0000102	.0456	.000430	.0459	.0302	.0180	.0169	.0701	.0680	.0401	.0378
20.	.00724	.00724	.00526	.00326	.00198	.00398	.0000047	.0538	.000541	.0544	.0331	.00858	.00823	.0517	.0509	.0305	.0278
30.	.00526	.00526	.00395	.00206	.00133	.00320		.0637	.000703	.0642	.0352	.00523	.00509	.0456	.0451	.0288	.0267
40.	.00419	.00419	.00320	.00147	.00101	.00272		.0712	.000817	.0721	.0346	.00282	.00276	.0419	.0416	.0299	.0238
50.	.00349	.00349	.00269	.00112	.000805	.00237		.0767	.000904	.0776	.0343	.00188	.00185	.0419	.0416	.0326	.0250
60.	.00302	.00302	.00234	.000878	.000674	.00215		.0808	.000971	.0817	.0337	.00139	.00137	.0424	.0424	.0352	.0265
80.	.00238	.00238	.00187	.000596	.000509	.00178		.0869	.00108	.0881	.0326	.00108	.00107	.0436	.0433	.0372	.0277
100.	.00197	.00197	.00157	.000439	.000407	.00153		.0919	.00116	.0930	.0308	.000750	.000744	.0456	.0456	.0407	.0297
												.000570	.000567	.0488	.0488	.0451	.0320
												.000352	.000352	.0552	.0552	.0526	.0349
												.000255	.000254	.0619	.0619	.0599	.0366
												.000163	.000163	.0698	.0698	.0683	.0375
												.000119	.000119	.0765	.0765	.0753	.0360
												.0000933	.0000933	.0811	.0811	.0805	.0355
												.0000765	.0000765	.0849	.0849	.0840	.0346
												.0000558	.0000558	.0904	.0904	.0901	.0331
												.0000436	.0000436	.0951	.0951	.0948	.0314

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(barns/atom)

E (MeV)	KN $\sigma_{inc,t}$	BD $\sigma_{inc,t}$	KN $\sigma_{inc,a}$	BD $\sigma_{inc,a}$	KN $\sigma_{inc,s}$	BD $\sigma_{inc,s}$	σ_{coh}	$\sigma_{\kappa n}$	$\sigma_{\kappa e}$	$\sigma_{\kappa,t}$	$\sigma_{\kappa,a}$	$\sigma_{\gamma,t}$	$\sigma_{\gamma,a}$	$\sigma_{tot,t}$	$\sigma_{tot,t-coh}$	$\sigma_{tot,a}$	$\sigma_{tot,en}$
.001	55.0	1.22	.107	.00238	54.9	1.22	4380.					2340000.	2340000.	2340000.	2340000.	2340000.	2340000.
.0015	54.9	2.26	.160	.00659	54.7	2.25	4210.					961000.	961000.	965000.	961000.	961000.	961000.
.002	54.8	3.32	.213	.0129	54.6	3.31	4010.					504000.	504000.	508000.	504000.	504000.	504000.
M_V .002581	54.7	4.52	.273	.0226	54.4	4.50	3770.					286000.	286000.	290000.	286000.	286000.	286000.
M_{IV} .002689	54.6	4.74	.284	.0247	54.4	4.72	3730.					895000.	895000.	899000.	895000.	895000.	895000.
.003	54.6	5.34	.316	.0310	54.3	5.31	3610.					821000.	821000.	825000.	821000.	821000.	821000.
M_{III} .003177	54.5	5.67	.334	.0348	54.2	5.64	3540.					931000.	931000.	935000.	931000.	931000.	931000.
M_{II} .003696	54.4	6.62	.387	.0471	54.0	6.57	3340.					686000.	686000.	690000.	686000.	686000.	686000.
.004	54.4	7.17	.418	.0552	53.9	7.11	3230.					583000.	583000.	587000.	583000.	583000.	583000.
M_I .004000	54.4	7.17	.418	.0552	53.9	7.11	3230.					670000.	670000.	674000.	670000.	670000.	670000.
.005	54.2	8.85	.519	.0848	53.6	8.77	2890.					462000.	462000.	465000.	462000.	462000.	462000.
.006	53.9	10.4	.618	.119	53.3	10.3	2590.					550000.	550000.	553000.	550000.	550000.	550000.
.008	53.5	13.3	.810	.201	52.7	13.1	2110.					511000.	511000.	514000.	511000.	511000.	511000.
.01	53.2	15.9	.996	.298	52.2	15.6	1750.					446000.	446000.	449000.	446000.	446000.	446000.
L_{III} .013420	52.5	19.4	1.30	.482	51.2	18.9	1310.					511000.	511000.	514000.	511000.	511000.	511000.
.015	52.2	20.7	1.44	.573	50.8	20.1	1160.					283000.	283000.	286000.	283000.	283000.	283000.
L_{II} .015714	52.1	21.3	1.50	.614	50.6	20.7	1100.					175000.	175000.	178000.	175000.	175000.	175000.
L_I .016391	51.9	21.8	1.56	.653	50.4	21.1	1050.					81900.	81900.	84000.	81900.	81900.	81900.
.02	51.3	24.2	1.85	.873	49.4	23.3	817.					45200.	45200.	47000.	45200.	45200.	45200.
.03	49.6	28.8	2.58	1.50	47.0	27.3	475.					20400.	20400.	21700.	20400.	20400.	20400.
.04	48.0	31.6	3.20	2.11	44.8	29.5	314.					52400.	37200.	53700.	52400.	52400.	37200.
.05	46.6	33.2	3.76	2.68	42.8	30.5	222.					39600.	29300.	40800.	39600.	39600.	29300.
.06	45.3	34.1	4.25	3.20	41.0	30.9	165.					35300.	26500.	36400.	35300.	35300.	26500.
.08	42.9	34.7	5.03	4.06	37.9	30.6	101.					48800.	35900.	49900.	48800.	48800.	35900.
K .090526	41.8	34.7	5.37	4.46	36.5	30.2	80.3					43500.	32500.	44600.	43500.	43500.	32500.
.1	40.9	34.7	5.64	4.79	35.3	29.9	67.0					50600.	37600.	51700.	50600.	50600.	37600.
.15	36.8	33.6	6.68	6.10	30.1	27.5	31.6					29900.	23600.	30700.	29900.	29900.	23600.
.2	33.7	31.7	7.29	6.85	26.4	24.8	18.3					10300.	8850.	10800.	10300.	10300.	8850.
.3	29.3	28.3	7.91	7.63	21.4	20.7	8.34					4770.	4270.	5120.	4800.	4770.	4270.
.4	26.3	25.7	8.14	7.84	18.1	17.9	4.72					2600.	2380.	2860.	2630.	2600.	2380.
.5	24.0	23.6	8.19	7.93	15.8	15.7	3.06					1590.	1480.	1790.	1620.	1590.	1480.
.6	22.2	21.9	8.16	7.88	14.0	14.0	2.11					716.	678.	852.	751.	721.	682.
.8	19.5	19.3	7.97	7.66	11.5	11.6	1.20					506.	482.	621.	541.	511.	486.
1.	17.5	17.4	7.71	7.22	9.82	10.2	.776					2430.	766.	2540.	2460.	2440.	770.
1.5	14.2	14.2	7.05	6.66	7.20	7.54	.348	.565		.565	.171	1870.	711.	1970.	1900.	1880.	716.
2.	12.1	12.1	6.45	6.00	5.70	6.10	.197	1.79		1.79	.820	648.	380.	713.	682.	655.	386.
3.	9.55	9.54	5.51	4.92	4.04	4.62	.0877	4.07	.00334	4.07	2.46	303.	209.	353.	335.	310.	216.
4.	7.98	7.98	4.85	4.15	3.14	3.83	.0495	5.93	.0137	5.94	3.95	105.	83.3	142.	133.	113.	90.9
5.	6.90	6.90	4.33	3.59	2.57	3.31	.0324	7.48	.0269	7.51	5.21	51.3	43.3	81.7	77.0	59.4	51.1
6.	6.09	6.09	3.92	3.13	2.17	2.96	.0223	8.70	.0416	8.74	6.19	30.0	26.3	56.7	53.6	38.2	34.2
8.	4.98	4.98	3.33	2.49	1.66	2.49	.0125	10.6	.0700	10.7	7.61	19.6	17.6	43.6	41.5	27.8	25.5
10.	4.25	4.25	2.90	2.07	1.34	2.18	.00815	12.6	.0972	12.7	8.93	10.4	9.59	30.9	29.7	18.4	17.2
15.	3.14	3.14	2.23	1.50	.911	1.64	.00364	16.2	.150	16.3	10.7	6.56	6.15	24.7	24.0	14.3	13.4
20.	2.52	2.52	1.83	1.13	.690	1.39	.00170	18.8	.188	19.0	11.6	3.15	3.02	18.3	17.9	10.8	9.85
30.	1.84	1.84	1.37	.719	.464	1.12		22.4	.244	22.6	12.3	1.90	1.84	16.0	15.8	10.1	8.66
40.	1.46	1.46	1.11	.510	.350	.950		25.0	.284	25.3	12.2	1.02	.999	14.7	14.6	10.6	8.38
50.	1.22	1.22	.938	.388	.281	.832		27.0	.314	27.3	12.0	.681	.670	14.7	14.6	11.5	8.77
60.	1.05	1.05	.814	.303	.235	.747		28.4	.338	28.7	11.8	.506	.500	14.9	14.9	12.3	9.30
80.	.828	.828	.651	.206	.177	.622		30.6	.374	31.0	11.3	.398	.394	15.3	15.2	13.1	9.71
100.	.687	.687	.546	.153	.142	.534		32.2	.402	32.6	10.8	.274	.272	16.0	16.0	14.3	10.4
												.208	.207	17.2	17.2	15.8	11.2
												.127	.126	19.6	19.6	18.7	12.3
												.0922	.0919	21.6	21.6	20.9	12.8
												.0592	.0591	24.5	24.5	24.0	13.1
												.0430	.0429	26.8	26.8	26.5	12.8
												.0338	.0338	28.6	28.6	28.3	12.4
												.0276	.0276	29.8	29.8	29.5	12.1
												.0202	.0202	31.8	31.8	31.7	11.5
												.0157	.0157	33.3	33.3	33.2	11.0

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(cm^2/g = 0.002882 x barns/atom)

E (MeV)	$(\frac{\mu}{\rho})^{KN}_{inc,t}$	$(\frac{\mu}{\rho})^{BD}_{inc,t}$	$(\frac{\mu}{\rho})^{KN}_{inc,a}$	$(\frac{\mu}{\rho})^{BD}_{inc,a}$	$(\frac{\mu}{\rho})^{KN}_{inc,s}$	$(\frac{\mu}{\rho})^{BD}_{inc,s}$	$(\frac{\mu}{\rho})_{coh}$	$(\frac{\mu}{\rho})_{\kappa n}$	$(\frac{\mu}{\rho})_{\kappa e}$	$(\frac{\mu}{\rho})_{\kappa,t}$	$(\frac{\mu}{\rho})_{\kappa,a}$	$(\frac{\mu}{\rho})_{\tau,t}$	$(\frac{\mu}{\rho})_{\tau,a}$	$(\frac{\mu}{\rho})_{tot,t}$	$(\frac{\mu}{\rho})_{tot,t-coh}$	$(\frac{\mu}{\rho})_{tot,a}$	$(\frac{\mu}{\rho})_{tot,en}$
.001	.159	.00352	.000308	.0000069	.158	.00352	12.6					6740.	6740.	6740.	6740.	6740.	6740.
.0015	.158	.00651	.000461	.0000190	.158	.00648	12.1					2770.	2770.	2780.	2770.	2770.	2770.
.002	.158	.00957	.000614	.0000372	.157	.00954	11.6					1450.	1450.	1460.	1450.	1450.	1450.
M_V .002581	.158	.0130	.000787	.0000651	.157	.0130	10.9					824.	824.	836.	824.	824.	824.
M_{IV} .002689	.157	.0137	.000818	.0000712	.157	.0136	10.7					2580.	2580.	2590.	2580.	2580.	2580.
.003	.157	.0154	.000911	.0000893	.156	.0153	10.4					2370.	2370.	2380.	2370.	2370.	2370.
M_{III} .003177	.157	.0163	.000963	.000100	.156	.0163	10.2					2680.	2680.	2690.	2680.	2680.	2680.
M_{II} .003696	.157	.0191	.00112	.000136	.156	.0189	9.63					1980.	1980.	1990.	1980.	1980.	1980.
.004	.157	.0207	.00120	.000159	.155	.0205	9.31					1680.	1680.	1690.	1680.	1680.	1680.
M_I .004000	.157	.0207	.00120	.000159	.155	.0205	9.31					1930.	1930.	1940.	1930.	1930.	1930.
.005	.156	.0255	.00150	.000244	.154	.0253	8.33					1330.	1330.	1340.	1330.	1330.	1330.
.006	.155	.0300	.00178	.000343	.154	.0297	7.46					1590.	1590.	1590.	1590.	1590.	1590.
.008	.154	.0383	.00233	.000579	.152	.0378	6.08					1470.	1470.	1480.	1470.	1470.	1470.
.01	.153	.0458	.00287	.000859	.150	.0450	5.04					1290.	1290.	1290.	1290.	1290.	1290.
L_{III} .013420	.151	.0559	.00375	.00139	.148	.0545	3.78					1470.	1470.	1480.	1470.	1470.	1470.
.015	.150	.0597	.00415	.00165	.146	.0579	3.34					816.	816.	824.	816.	816.	816.
L_{II} .015714	.150	.0614	.00432	.00177	.146	.0597	3.17					504.	504.	513.	504.	504.	504.
L_I .016391	.150	.0628	.00450	.00188	.145	.0608	3.03					236.	236.	242.	236.	236.	236.
.02	.148	.0697	.00533	.00252	.142	.0672	2.35					130.	130.	135.	130.	130.	130.
.03	.143	.0830	.00744	.00432	.135	.0787	1.37					58.8	58.8	62.5	58.8	58.8	58.8
.04	.138	.0911	.00922	.00608	.129	.0850	.905					151.	107.	155.	151.	151.	107.
.05	.134	.0957	.0108	.00772	.123	.0879	.640					114.	84.4	118.	114.	114.	84.4
.06	.131	.0983	.0122	.00922	.118	.0891	.476					102.	76.4	105.	102.	102.	76.4
.08	.124	.100	.0145	.0117	.109	.0882	.291					141.	103.	144.	141.	141.	103.
K .090526	.120	.100	.0155	.0129	.105	.0870	.231					125.	93.7	129.	125.	125.	93.7
.1	.118	.100	.0163	.0138	.102	.0862	.193					146.	108.	149.	146.	146.	108.
.15	.106	.0968	.0193	.0176	.0867	.0793	.0911					86.2	68.0	88.5	86.2	86.2	68.0
.2	.0971	.0914	.0210	.0197	.0761	.0715	.0527					29.7	25.5	31.1	29.7	29.7	25.5
.3	.0844	.0816	.0228	.0220	.0617	.0597	.0240					13.7	12.3	14.8	13.8	13.7	12.3
.4	.0758	.0741	.0235	.0226	.0522	.0516	.0136					7.49	6.86	8.24	7.58	7.49	6.86
.5	.0692	.0680	.0236	.0229	.0455	.0452	.00882					4.58	4.27	5.16	4.67	4.58	4.27
.6	.0640	.0631	.0235	.0227	.0403	.0403	.00608					2.06	1.95	2.46	2.16	2.08	1.97
.8	.0562	.0556	.0230	.0221	.0331	.0334	.00346					1.46	1.39	1.79	1.56	1.47	1.40
1.	.0504	.0501	.0222	.0208	.0283	.0294	.00224					7.00	2.21	7.32	7.09	7.03	2.22
1.5	.0409	.0409	.0203	.0192	.0208	.0217	.00100	.00163		.00163	.000493	5.39	2.05	5.68	5.48	5.42	2.06
2.	.0349	.0349	.0186	.0173	.0164	.0176	.000568	.00516		.00516	.00236	1.87	1.10	2.05	1.97	1.89	1.11
3.	.0275	.0275	.0159	.0142	.0116	.0133	.000253	.0117	.00000963	.0117	.00709	.873	.602	1.02	.965	.893	.623
4.	.0230	.0230	.0140	.0120	.00905	.0110	.000143	.0171	.0000395	.0171	.0114	.303	.240	.409	.383	.326	.262
5.	.0199	.0199	.0125	.0103	.00741	.00954	.0000934	.0216	.0000775	.0216	.0150	.148	.125	.235	.222	.171	.147
6.	.0176	.0176	.0113	.00902	.00625	.00853	.0000643	.0251	.000120	.0252	.0178	.0865	.0758	.163	.154	.110	.0986
8.	.0144	.0144	.00960	.00718	.00478	.00718	.0000360	.0305	.000202	.0308	.0219	.0565	.0507	.126	.120	.0801	.0735
10.	.0122	.0122	.00836	.00597	.00386	.00628	.0000235	.0363	.000280	.0366	.0257	.0300	.0276	.0891	.0856	.0530	.0496
15.	.00905	.00905	.00643	.00432	.00263	.00473	.0000105	.0467	.000432	.0470	.0308	.0149	.0177	.0712	.0692	.0412	.0386
20.	.00726	.00726	.00527	.00326	.00199	.00401	.0000049	.0542	.000542	.0548	.0334	.00908	.00870	.0527	.0516	.0311	.0284
30.	.00530	.00530	.00395	.00207	.00134	.00323		.0646	.000703	.0651	.0354	.00548	.00530	.0461	.0455	.0291	.0250
40.	.00421	.00421	.00320	.00147	.00101	.00274		.0720	.000818	.0729	.0352	.00294	.00288	.0424	.0421	.0305	.0242
50.	.00352	.00352	.00270	.00112	.000810	.00240		.0778	.000905	.0787	.0346	.00196	.00193	.0424	.0421	.0331	.0253
60.	.00303	.00303	.00235	.000873	.000677	.00215		.0818	.000974	.0827	.0340	.00146	.00144	.0429	.0429	.0354	.0268
80.	.00239	.00239	.00188	.000594	.000510	.00179		.0882	.00108	.0893	.0326	.00115	.00114	.0441	.0438	.0378	.0280
100.	.00198	.00198	.00157	.000441	.000409	.00154		.0928	.00116	.0940	.0311	.000790	.000784	.0461	.0461	.0412	.0300
												.000599	.000597	.0496	.0496	.0455	.0323
												.000366	.000363	.0565	.0565	.0539	.0354
												.000266	.000265	.0623	.0623	.0602	.0369
												.000171	.000170	.0706	.0706	.0692	.0378
												.000124	.000124	.0772	.0772	.0764	.0369
												.0000974	.0000974	.0824	.0824	.0816	.0357
												.0000795	.0000795	.0859	.0859	.0850	.0349
												.0000582	.0000582	.0914	.0916	.0914	.0331
												.0000452	.0000452	.0960	.0960	.0957	.0317

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(barns/atom)

E (MeV)	$\sigma^{KN}_{inc,t}$	$\sigma^{BD}_{inc,t}$	$\sigma^{KN}_{inc,a}$	$\sigma^{BD}_{inc,a}$	$\sigma^{KN}_{inc,s}$	$\sigma^{BD}_{inc,s}$	σ_{coh}	$\sigma_{\pi n}$	$\sigma_{\pi e}$	$\sigma_{\pi,t}$	$\sigma_{\pi,a}$	$\sigma_{\gamma,t}$	$\sigma_{\gamma,a}$	$\sigma_{tot,t}$	$\sigma_{tot,t-coh}$	$\sigma_{tot,a}$	$\sigma_{tot,en}$
.001	55.7	1.20	.108	.00234	55.5	1.20	4490.					2450000.	2450000.	2450000.	2450000.	2450000.	2450000.
.0015	55.5	2.25	.162	.00656	55.4	2.24	4310.					1010000.	1010000.	1010000.	1010000.	1010000.	1010000.
.002	55.4	3.34	.215	.0130	55.2	3.33	4100.					526000.	526000.	526000.	526000.	526000.	526000.
M_V .002683	55.3	4.79	.287	.0249	55.0	4.77	3810.					274000.	274000.	278000.	274000.	274000.	274000.
												856000.	856000.	860000.	856000.	856000.	856000.
M_{IV} .002798	55.3	5.02	.299	.0272	55.0	4.99	3760.					784000.	784000.	788000.	784000.	784000.	784000.
												888000.	888000.	892000.	888000.	888000.	888000.
.003	55.2	5.42	.320	.0314	54.9	5.39	3680.					729000.	729000.	733000.	729000.	729000.	729000.
M_{III} .003295	55.2	6.00	.351	.0381	54.8	5.96	3560.					559000.	559000.	563000.	559000.	559000.	559000.
												643000.	643000.	647000.	643000.	643000.	643000.
M_{II} .003849	55.0	7.04	.408	.0522	54.6	6.99	3350.					440000.	440000.	443000.	440000.	440000.	440000.
												524000.	524000.	527000.	524000.	524000.	524000.
.004	55.0	7.31	.423	.0563	54.6	7.25	3290.					472000.	472000.	475000.	472000.	472000.	472000.
M_I .004156	55.0	7.59	.439	.0606	54.5	7.53	3240.					427000.	427000.	430000.	427000.	427000.	427000.
												487000.	487000.	490000.	487000.	487000.	487000.
.005	54.8	9.02	.525	.0864	54.3	8.93	2950.					298000.	298000.	301000.	298000.	298000.	298000.
.006	54.6	10.6	.625	.121	54.0	10.5	2650.					184000.	184000.	187000.	184000.	184000.	184000.
.008	54.2	13.5	.820	.204	53.4	13.3	2160.					86700.	86700.	88900.	86700.	86700.	86700.
.01	53.8	16.1	1.01	.302	52.8	15.8	1790.					47600.	47600.	49400.	47600.	47600.	47600.
L_{III} .013814	53.1	20.0	1.35	.510	51.7	19.5	1310.					19900.	19900.	21200.	19900.	19900.	19900.
												50700.	35900.	52000.	50700.	50700.	35900.
.015	52.8	20.9	1.46	.578	51.4	20.3	1190.					41000.	30000.	42200.	41000.	41000.	30000.
L_{II} .016244	52.6	21.9	1.56	.651	51.0	21.2	1090.					33900.	25500.	35000.	33900.	33900.	25500.
												46800.	34400.	47900.	46800.	46800.	34400.
L_I .016936	52.5	22.4	1.62	.692	50.8	21.7	1030.					41800.	31100.	42900.	41800.	41800.	31100.
												48600.	36000.	49700.	48600.	48600.	36000.
.02	51.9	24.4	1.87	.881	50.0	23.5	840.					31200.	24400.	32100.	31200.	31200.	24400.
.03	50.2	29.1	2.61	1.51	47.6	27.6	489.					10800.	9220.	11300.	10800.	10800.	9220.
.04	48.6	31.9	3.24	2.13	45.4	29.8	324.					5010.	4460.	5370.	5040.	5010.	4460.
.05	47.2	33.5	3.81	2.70	43.4	30.8	229.					2750.	2510.	3010.	2780.	2750.	2510.
.06	45.8	34.5	4.30	3.24	41.5	31.3	170.					1670.	1550.	1870.	1700.	1670.	1550.
.08	43.4	35.1	5.09	4.11	38.4	31.0	104.					756.	715.	895.	791.	761.	719.
K .093105	42.1	35.1	5.51	4.6	36.6	30.5	78.6					493.	470.	607.	528.	499.	475.
												2350.	741.	2460.	2390.	2360.	746.
.1	41.4	35.0	5.71	4.83	35.7	30.2	69.0					1950.	707.	2050.	1990.	1960.	712.
.15	37.3	34.0	6.76	6.17	30.5	27.8	32.6					672.	386.	739.	706.	679.	392.
.2	34.1	32.1	7.38	6.94	26.8	25.2	18.9					318.	217.	369.	350.	325.	224.
.3	29.7	28.7	8.00	7.74	21.7	21.0	8.60					110.	86.6	147.	139.	118.	94.3
.4	26.6	26.0	8.24	7.93	18.4	18.1	4.87					53.8	45.2	84.7	79.8	62.0	53.1
.5	24.3	23.9	8.28	8.03	16.0	15.9	3.15					31.5	27.5	58.5	55.4	39.8	35.5
.6	22.5	22.2	8.26	7.99	14.2	14.2	2.19					20.8	18.6	45.2	43.0	29.1	26.6
.8	19.7	19.6	8.07	7.78	11.7	11.8	1.23					10.9	10.0	31.7	30.5	19.0	17.8
1.	17.7	17.6	7.80	7.30	9.94	10.3	.800					6.93	6.49	25.3	24.5	14.7	13.8
1.5	14.4	14.4	7.13	6.75	7.28	7.65	.359	.585		.585	.177	3.30	3.16	18.6	18.3	11.0	10.1
2.	12.3	12.3	6.52	6.10	5.77	6.20	.202	1.85		1.85	.847	2.00	1.94	16.4	16.1	10.4	8.80
3.	9.67	9.65	5.58	4.97	4.09	4.68	.0906	4.19	.00338	4.19	2.52	1.08	1.06	15.0	14.9	10.8	8.55
4.	8.08	8.08	4.90	4.19	3.18	3.89	.0510	6.07	.0138	6.08	4.04	.720	.709	14.9	14.9	11.7	8.94
5.	6.98	6.98	4.38	3.62	2.60	3.36	.0333	7.63	.0272	7.66	5.31	.535	.528	15.2	15.2	12.6	9.46
6.	6.17	6.17	3.97	3.17	2.20	3.00	.0231	8.90	.0421	8.94	6.32	.421	.417	15.6	15.5	13.3	9.91
8.	5.05	5.05	3.37	2.52	1.68	2.53	.0129	10.9	.0710	11.0	7.81	.290	.288	16.4	16.3	14.7	10.6
10.	4.30	4.30	2.94	2.09	1.36	2.21	.00839	12.8	.0983	12.9	9.05	.220	.219	17.4	17.4	16.1	11.4
15.	3.18	3.18	2.26	1.51	.922	1.67	.00377	16.5	.152	16.7	10.9	.134	.133	20.0	20.0	19.1	12.5
20.	2.55	2.55	1.85	1.14	.698	1.41	.00177	19.3	.190	19.5	11.8	.0963	.0960	22.1	22.1	21.4	13.0
30.	1.86	1.86	1.39	.725	.470	1.13		22.8	.247	23.0	12.5	.0620	.0619	24.9	24.9	24.5	13.3
40.	1.48	1.48	1.12	.515	.354	.985		25.6	.287	25.9	12.4	.0452	.0451	27.4	27.4	27.1	13.0
50.	1.23	1.23	.949	.390	.284	.840		27.5	.318	27.8	12.2	.0355	.0355	29.1	29.1	28.8	12.6
60.	1.06	1.06	.824	.305	.238	.755		29.0	.341	29.3	11.9	.0291	.0291	30.4	30.4	30.2	12.2
80.	.837	.837	.659	.208	.179	.629		31.2	.378	31.6	11.5	.0213	.0213	32.5	32.5	32.3	11.7
100.	.696	.696	.552	.155	.143	.541		32.9	.406	33.3	10.9	.0166	.0166	34.0	34.0	33.9	11.1

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(cm²/g = 0.002868 x barns/atom)

E (MeV)	$(\frac{\mu}{\rho})^{KN}_{inc,t}$	$(\frac{\mu}{\rho})^{BD}_{inc,t}$	$(\frac{\mu}{\rho})^{KN}_{inc,a}$	$(\frac{\mu}{\rho})^{BD}_{inc,a}$	$(\frac{\mu}{\rho})^{KN}_{inc,s}$	$(\frac{\mu}{\rho})^{BD}_{inc,s}$	$(\frac{\mu}{\rho})_{coh}$	$(\frac{\mu}{\rho})_{\kappa n}$	$(\frac{\mu}{\rho})_{\kappa e}$	$(\frac{\mu}{\rho})_{\kappa,t}$	$(\frac{\mu}{\rho})_{\kappa,a}$	$(\frac{\mu}{\rho})_{\tau,t}$	$(\frac{\mu}{\rho})_{\tau,a}$	$(\frac{\mu}{\rho})_{tot,t}$	$(\frac{\mu}{\rho})_{tot,t-coh}$	$(\frac{\mu}{\rho})_{tot,a}$	$(\frac{\mu}{\rho})_{tot,en}$
.001	.160	.00344	.000310	.0000067	.159	.00344	12.9					7030.	7030.	7030.	7030.	7030.	7030.
.0015	.159	.00645	.000465	.0000188	.159	.00642	12.4					2900.	2900.	2900.	2900.	2900.	2900.
.002	.159	.00958	.000617	.0000373	.158	.00955	11.8					1510.	1510.	1520.	1510.	1510.	1510.
M_V .002683	.159	.0137	.000823	.0000714	.158	.0137	10.9					786.	786.	797.	786.	786.	786.
												2460.	2460.	2470.	2460.	2460.	2460.
M_{IV} .002798	.159	.0144	.000858	.0000780	.158	.0143	10.8					2250.	2250.	2260.	2250.	2250.	2250.
												2550.	2550.	2560.	2550.	2550.	2550.
.003	.158	.0155	.000918	.0000901	.157	.0155	10.6					2090.	2090.	2100.	2090.	2090.	2090.
M_{III} .003295	.158	.0172	.00101	.000109	.157	.0171	10.2					1600.	1600.	1610.	1600.	1600.	1600.
												1840.	1840.	1860.	1840.	1840.	1840.
M_{II} .003849	.158	.0202	.00117	.000150	.157	.0200	9.61					1260.	1260.	1270.	1260.	1260.	1260.
												1500.	1500.	1510.	1500.	1500.	1500.
.004	.158	.0210	.00121	.000161	.157	.0208	9.44					1350.	1350.	1360.	1350.	1350.	1350.
M_I .004156	.158	.0218	.00126	.000174	.156	.0216	9.29					1220.	1220.	1230.	1220.	1220.	1220.
												1400.	1400.	1410.	1400.	1400.	1400.
.005	.157	.0259	.00151	.000248	.156	.0256	8.46					855.	855.	863.	855.	855.	855.
.006	.157	.0304	.00179	.000347	.155	.0301	7.60					528.	528.	536.	528.	528.	528.
.008	.155	.0387	.00235	.000585	.153	.0381	6.19					249.	249.	255.	249.	249.	249.
.01	.154	.0462	.00290	.000866	.151	.0453	5.13					137.	137.	142.	137.	137.	137.
												57.1	57.1	60.8	57.1	57.1	57.1
L_{III} .013814	.152	.0574	.00387	.00146	.148	.0559	3.76					145.	103.	149.	145.	145.	103.
												118.	86.0	121.	118.	118.	86.0
.015	.151	.0599	.00419	.00166	.147	.0582	3.41					97.2	73.1	100.	97.2	97.2	73.1
L_{II} .016244	.151	.0628	.00447	.00187	.146	.0608	3.13					134.	98.7	137.	134.	134.	98.7
												120.	89.2	123.	120.	120.	89.2
L_I .016936	.151	.0642	.00465	.00198	.146	.0622	2.95					139.	103.	143.	139.	139.	103.
												89.5	70.0	92.1	89.5	89.5	70.0
.02	.149	.0700	.00536	.00253	.143	.0674	2.41					31.0	26.4	32.4	31.0	31.0	26.4
.03	.144	.0835	.00749	.00433	.137	.0792	1.40					14.4	12.8	15.4	14.5	14.4	12.8
.04	.139	.0915	.00929	.00611	.130	.0855	.929					7.89	7.20	8.63	7.97	7.89	7.20
.05	.135	.0961	.0109	.00774	.124	.0883	.657					4.79	4.45	5.36	4.88	4.79	4.45
.06	.131	.0989	.0123	.00929	.119	.0898	.488					2.17	2.05	2.57	2.27	2.18	2.06
.08	.124	.101	.0146	.0118	.110	.0889	.298					1.41	1.35	1.74	1.51	1.43	1.36
K .093105	.121	.101	.0158	.0132	.105	.0875	.225					6.74	2.13	7.06	6.85	6.77	2.14
												5.59	2.03	5.88	5.71	5.62	2.04
.1	.119	.100	.0164	.0139	.102	.0866	.198					1.93	1.11	2.12	2.02	1.95	1.12
.15	.107	.0975	.0194	.0177	.0875	.0797	.0935					.912	.622	1.06	1.00	.932	.642
.2	.0978	.0921	.0212	.0199	.0769	.0723	.0542					.315	.248	.422	.399	.338	.270
.3	.0852	.0823	.0229	.0222	.0622	.0602	.0247					.154	.130	.243	.229	.178	.152
.4	.0763	.0746	.0236	.0227	.0528	.0519	.0140					.0903	.0789	.168	.159	.114	.102
.5	.0697	.0685	.0237	.0230	.0459	.0456	.00903					.0597	.0533	.130	.123	.0835	.0763
.6	.0645	.0637	.0237	.0229	.0407	.0407	.00628					.0313	.0287	.0909	.0875	.0545	.0511
.8	.0565	.0562	.0231	.0223	.0336	.0338	.00353					.0199	.0186	.0726	.0703	.0422	.0396
1.	.0508	.0505	.0224	.0209	.0285	.0295	.00229					.00946	.00906	.0533	.0525	.0315	.0290
1.5	.0413	.0413	.0204	.0194	.0209	.0219	.00103	.00168		.00168	.000508	.00874	.00556	.0470	.0462	.0298	.0255
2.	.0353	.0353	.0187	.0175	.0165	.0178	.000579	.00531		.00531	.00243	.00310	.00304	.0430	.0427	.0310	.0245
3.	.0277	.0277	.0160	.0143	.0117	.0134	.000260	.0120	.00000969	.0120	.00723	.00206	.00203	.0427	.0427	.0336	.0256
4.	.0232	.0232	.0141	.0120	.00912	.0112	.000146	.0174	.0000396	.0174	.0116	.00153	.00151	.0436	.0436	.0361	.0271
5.	.0200	.0200	.0126	.0104	.00746	.00964	.0000955	.0219	.0000780	.0220	.0152	.00121	.00120	.0447	.0445	.0381	.0284
6.	.0177	.0177	.0114	.00909	.00631	.00860	.0000663	.0255	.000121	.0256	.0181	.000832	.000826	.0470	.0467	.0422	.0304
8.	.0145	.0145	.00967	.00723	.00482	.00726	.0000370	.0313	.000204	.0315	.0224	.000631	.000628	.0499	.0499	.0462	.0327
10.	.0123	.0123	.00843	.00599	.00390	.00634	.0000241	.0367	.000282	.0370	.0260	.000384	.000381	.0574	.0574	.0548	.0358
15.	.00912	.00912	.00648	.00433	.00264	.00479	.0000108	.0473	.000436	.0479	.0313	.000276	.000275	.0634	.0634	.0614	.0373
20.	.00731	.00731	.00531	.00327	.00200	.00404	.0000051	.0554	.000545	.0559	.0338	.000178	.000178	.0714	.0714	.0703	.0381
30.	.00533	.00533	.00399	.00208	.00135	.00324		.0654	.000708	.0660	.0358	.000130	.000129	.0786	.0786	.0777	.0373
40.	.00424	.00424	.00321	.00148	.00102	.00277		.0734	.000823	.0743	.0356	.000102	.000102	.0835	.0835	.0826	.0361
50.	.00353	.00353	.00272	.00112	.000815	.00241		.0789	.000912	.0797	.0350	.0000835	.0000835	.0872	.0872	.0866	.0350
60.	.00304	.00304	.00236	.000875	.000683	.00217		.0832	.000978	.0840	.0341	.0000611	.0000611	.0932	.0932	.0926	.0336
80.	.00240	.00240	.00189	.000597	.000513	.00180		.0895	.00108	.0906	.0330	.0000476	.0000476	.0975	.0975	.0972	.0318
100.	.00200	.00200	.00158	.000445	.000410	.00155		.0944	.00116	.0955	.0313						

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(barns/atom)

E (MeV)	$\sigma^{KN}_{inc,t}$	$\sigma^{BD}_{inc,t}$	$\sigma^{KN}_{inc,a}$	$\sigma^{BD}_{inc,a}$	$\sigma^{KN}_{inc,s}$	$\sigma^{BD}_{inc,s}$	σ_{coh}	σ_{n}	σ_{e}	$\sigma_{\gamma,t}$	$\sigma_{\gamma,a}$	$\sigma_{\gamma,t}$	$\sigma_{\gamma,a}$	$\sigma_{tot,t}$	$\sigma_{tot,t-coh}$	$\sigma_{tot,a}$	$\sigma_{tot,en}$
.001	56.3	1.17	.110	.00228	56.2	1.17	4600.					---	---	---	---	---	---
M_I .001042	56.3	1.25	.114	.00254	56.2	1.25	4580.					---	---	---	---	---	---
												2360000.	2360000.	2360000.	2360000.	2360000.	2360000.
.0015	56.2	2.23	.164	.0065	56.0	2.22	4410.					1050000.	1050000.	1050000.	1050000.	1050000.	1050000.
.002	56.1	3.36	.218	.0130	55.9	3.35	4200.					548000.	548000.	552000.	548000.	548000.	548000.
M_V .002787	55.9	5.07	.301	.0273	55.6	5.04	3850.					262000.	262000.	266000.	262000.	262000.	262000.
												818000.	818000.	822000.	818000.	818000.	818000.
M_{IV} .002909	55.9	5.32	.314	.0299	55.6	5.29	3800.					748000.	748000.	752000.	748000.	748000.	748000.
												848000.	848000.	852000.	848000.	848000.	848000.
.003	55.9	5.51	.324	.0319	55.6	5.48	3760.					774000.	774000.	778000.	774000.	774000.	774000.
M_{III} .003416	55.8	6.34	.368	.0418	55.4	6.30	3590.					536000.	536000.	540000.	536000.	536000.	536000.
												617000.	617000.	621000.	617000.	617000.	617000.
.004	55.7	7.46	.428	.0574	55.2	7.40	3360.					422000.	422000.	425000.	422000.	422000.	422000.
M_{II} .004006	55.7	7.47	.429	.0576	55.2	7.41	3360.					420000.	420000.	423000.	420000.	420000.	420000.
												500000.	500000.	503000.	500000.	500000.	500000.
M_I .004317	55.6	8.03	.461	.0666	55.1	7.96	3250.					408000.	408000.	411000.	408000.	408000.	408000.
												465000.	465000.	468000.	465000.	465000.	465000.
.005	55.5	9.2	.531	.0881	54.9	9.11	3010.					315000.	315000.	318000.	315000.	315000.	315000.
.006	55.2	10.8	.632	.124	54.6	10.7	2710.					194000.	194000.	197000.	194000.	194000.	194000.
.008	54.8	13.7	.830	.207	54.0	13.5	2210.					91000.	91000.	93200.	91000.	91000.	91000.
.01	54.4	16.3	1.02	.305	53.4	16.0	1840.					50200.	50200.	52100.	50200.	50200.	50200.
L_{III} .014214	53.6	20.5	1.41	.538	52.2	20.0	1300.					19400.	19400.	20700.	19400.	19400.	19400.
												49000.	34600.	50300.	49000.	49000.	34600.
.015	53.5	21.2	1.48	.586	52.0	20.6	1220.					43000.	31000.	44200.	43000.	43000.	31000.
L_{II} .016785	53.1	22.5	1.63	.689	51.5	21.8	1070.					32500.	24400.	33600.	32500.	32500.	24400.
												44900.	32900.	46000.	44900.	44900.	32900.
L_I .017491	53.0	23.0	1.69	.732	51.3	22.3	1020.					40100.	29800.	41100.	40100.	40100.	29800.
												46700.	34500.	47700.	46700.	46700.	34500.
.02	52.5	24.7	1.89	.891	50.6	23.8	864.					32700.	25300.	33600.	32700.	32700.	25300.
.03	50.8	29.3	2.64	1.52	48.2	27.8	502.					11300.	9580.	11800.	11300.	11300.	9580.
.04	49.2	32.2	3.28	2.15	45.9	30.1	333.					5250.	4650.	5620.	5280.	5250.	4650.
.05	47.7	33.9	3.85	2.74	43.9	31.2	236.					2890.	2630.	3160.	2920.	2890.	2630.
.06	46.4	34.8	4.35	3.27	42.0	31.5	175.					1760.	1630.	1970.	1790.	1760.	1630.
.08	44.0	35.5	5.15	4.16	38.8	31.3	107.					798.	753.	941.	834.	803.	757.
K .095730	42.3	35.4	5.66	4.73	36.6	30.7	77.0					481.	458.	593.	516.	487.	463.
												2270.	716.	2380.	2310.	2280.	721.
.1	41.9	35.4	5.78	4.89	36.1	30.5	71.1					2010.	692.	2120.	2050.	2020.	697.
.15	37.7	34.4	6.84	6.24	30.9	28.2	33.6					700.	394.	768.	734.	707.	400.
.2	34.5	32.5	7.47	7.03	27.1	25.5	19.5					333.	224.	385.	366.	348.	231.
.3	30.0	29.0	8.10	7.82	21.9	21.2	8.86					115.	89.9	153.	144.	123.	97.7
.4	26.9	26.3	8.34	8.02	18.6	18.3	5.02					56.3	47.1	87.6	82.6	64.6	55.1
.5	24.6	24.2	8.38	8.13	16.2	16.1	3.25					33.1	28.8	60.5	57.3	41.5	36.9
.6	22.7	22.5	8.35	8.10	14.4	14.4	2.24					21.8	19.4	46.5	44.3	30.1	27.5
.8	20.0	19.8	8.17	7.86	11.8	11.9	1.27					11.5	10.6	32.6	31.3	19.7	18.5
1.	18.0	17.8	7.90	7.39	10.1	10.4	.822					7.32	6.84	25.9	25.1	15.2	14.2
1.5	14.6	14.5	7.21	6.79	7.37	7.71	.370	.603		.603	.182	3.50	3.35	19.0	18.6	11.3	10.3
2.	12.4	12.4	6.60	6.14	5.84	6.26	.207	1.91		1.91	.875	2.11	2.04	16.6	16.4	10.6	9.05
3.	9.78	9.77	5.64	5.03	4.14	4.74	.0935	4.30	.00342	4.30	2.59	1.14	1.12	15.3	15.2	11.1	8.74
4.	8.18	8.18	4.96	4.24	3.21	3.94	.0525	6.20	.0140	6.21	4.13	.760	.748	15.2	15.1	11.9	9.12
5.	7.06	7.06	4.43	3.66	2.63	3.40	.0343	7.80	.0275	7.83	5.42	.562	.555	15.5	15.5	12.8	9.63
6.	6.24	6.24	4.02	3.19	2.22	3.05	.0238	9.10	.0426	9.14	6.45	.443	.438	15.8	15.8	13.6	10.1
8.	5.11	5.11	3.41	2.54	1.70	2.57	.0133	11.2	.0718	11.3	8.01	.306	.303	16.7	16.7	15.0	10.9
10.	4.35	4.35	2.97	2.11	1.38	2.24	.00863	13.2	.0996	13.3	9.30	.230	.228	17.9	17.9	16.5	11.6
15.	3.22	3.22	2.28	1.53	.933	1.69	.00390	16.8	.153	17.0	11.0	.141	.140	20.4	20.4	19.4	12.7
20.	2.58	2.58	1.88	1.15	.706	1.43	.00184	19.7	.193	19.9	12.0	.101	.101	22.6	22.6	21.9	13.3
30.	1.88	1.88	1.41	.731	.475	1.15		23.4	.250	23.6	12.7	.0649	.0648	25.5	25.5	25.1	13.5
40.	1.49	1.49	1.14	.517	.359	.973		26.1	.290	26.4	12.5	.0474	.0473	27.9	27.9	27.6	13.1
50.	1.25	1.25	.960	.395	.287	.855		28.1	.321	28.4	12.4	.0371	.0371	29.7	29.7	29.4	12.8
60.	1.07	1.07	.834	.307	.240	.763		29.7	.345	30.0	12.2	.0305	.0305	31.1	31.1	30.9	12.5
80.	.847	.847	.666	.209	.181	.638		31.9	.382	32.3	11.7	.0223	.0223	33.2	33.2	33.0	11.9
100.	.704	.704	.559	.156	.145	.548		33.5	.411	33.9	11.1	.0175	.0175	34.6	34.6	34.5	11.3

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(cm²/g = 0.002868 x barns/atom)

E (MeV)	$(\frac{\mu}{\rho})^{KN}_{inc,t}$	$(\frac{\mu}{\rho})^{BD}_{inc,t}$	$(\frac{\mu}{\rho})^{KN}_{inc,a}$	$(\frac{\mu}{\rho})^{BD}_{inc,a}$	$(\frac{\mu}{\rho})^{KN}_{inc,s}$	$(\frac{\mu}{\rho})^{BD}_{inc,s}$	$(\frac{\mu}{\rho})_{coh}$	$(\frac{\mu}{\rho})_{\kappa n}$	$(\frac{\mu}{\rho})_{\kappa e}$	$(\frac{\mu}{\rho})_{\kappa,t}$	$(\frac{\mu}{\rho})_{\kappa,a}$	$(\frac{\mu}{\rho})_{\tau,t}$	$(\frac{\mu}{\rho})_{\tau,a}$	$(\frac{\mu}{\rho})_{tot,t}$	$(\frac{\mu}{\rho})_{tot,t-coh}$	$(\frac{\mu}{\rho})_{tot,a}$	$(\frac{\mu}{\rho})_{tot,en}$
.001	.161	.00336	.000315	.0000065	.161	.00336	13.2					---	---	---	---	---	---
N_I .001042	.161	.00358	.000327	.0000073	.161	.00358	13.1					---	---	---	---	---	---
.0015	.161	.00640	.000470	.0000186	.161	.00637	12.6					6770.	6770.	6770.	6770.	6770.	6770.
.002	.161	.00964	.000625	.0000373	.160	.00961	12.0					3010.	3010.	3010.	3010.	3010.	3010.
N_V .002787	.160	.0145	.000863	.0000783	.159	.0145	11.0					1570.	1570.	1580.	1570.	1570.	1570.
N_{IV} .002909	.160	.0153	.000901	.0000858	.159	.0152	10.9					751.	751.	763.	751.	751.	751.
.003	.160	.0158	.000929	.0000915	.159	.0157	10.8					2350.	2350.	2360.	2350.	2350.	2350.
N_{III} .003416	.160	.0182	.00106	.000120	.159	.0181	10.3					2150.	2150.	2140.	2150.	2150.	2150.
.004	.160	.0214	.00123	.000165	.158	.0212	9.64					2430.	2430.	2440.	2430.	2430.	2430.
N_{II} .004006	.160	.0214	.00123	.000165	.158	.0213	9.64					2220.	2220.	2230.	2220.	2220.	2220.
N_I .004317	.159	.0230	.00132	.000191	.158	.0228	9.32					1540.	1540.	1550.	1540.	1540.	1540.
.005	.159	.0264	.00152	.000253	.157	.0261	8.63					1770.	1770.	1780.	1770.	1770.	1770.
.006	.158	.0310	.00181	.000356	.157	.0307	7.77					1210.	1210.	1220.	1210.	1210.	1210.
.008	.157	.0393	.00238	.000594	.155	.0387	6.34					1200.	1200.	1210.	1200.	1200.	1200.
.01	.156	.0467	.00293	.000875	.153	.0459	5.28					1430.	1430.	1440.	1430.	1430.	1430.
L_{III} .014214	.154	.0588	.00404	.00154	.150	.0574	3.73					1170.	1170.	1180.	1170.	1170.	1170.
.015	.153	.0608	.00424	.00168	.149	.0591	3.50					1330.	1330.	1340.	1330.	1330.	1330.
L_{II} .016785	.152	.0645	.00467	.00198	.148	.0625	3.07					903.	903.	912.	903.	903.	903.
L_I .017491	.152	.0660	.00485	.00210	.147	.0640	2.93					556.	556.	565.	556.	556.	556.
.02	.151	.0708	.00542	.00256	.145	.0683	2.48					261.	261.	267.	261.	261.	261.
.03	.146	.0840	.00757	.00436	.138	.0797	1.44					144.	144.	149.	144.	144.	144.
.04	.141	.0923	.00941	.00617	.132	.0863	.955					55.6	55.6	59.4	55.6	55.6	55.6
.05	.137	.0972	.0110	.00786	.126	.0895	.677					141.	99.2	144.	141.	141.	99.2
.06	.133	.0998	.0125	.00938	.120	.0903	.502					123.	88.9	127.	123.	123.	88.9
.08	.126	.102	.0148	.0119	.111	.0898	.307					93.2	70.0	96.4	93.2	93.2	70.0
K .095730	.121	.102	.0162	.0136	.105	.0880	.221					129.	94.4	132.	129.	129.	94.4
.1	.120	.102	.0166	.0140	.104	.0875	.204					115.	85.5	118.	115.	115.	85.5
.15	.108	.0987	.0196	.0179	.0886	.0809	.0964					134.	98.9	137.	134.	134.	98.9
.2	.0989	.0932	.0214	.0202	.0777	.0731	.0559					93.8	72.6	96.4	93.8	93.8	72.6
.3	.0860	.0832	.0232	.0224	.0628	.0608	.0254					32.4	27.5	33.8	32.4	32.4	27.5
.4	.0771	.0754	.0239	.0230	.0533	.0525	.0144					15.1	13.3	16.1	15.1	15.1	13.3
.5	.0706	.0694	.0240	.0233	.0465	.0462	.00932					8.29	7.54	9.06	8.37	8.29	7.54
.6	.0651	.0645	.0239	.0232	.0413	.0413	.00642					5.05	4.67	5.65	5.13	5.05	4.67
.8	.0574	.0568	.0234	.0225	.0338	.0341	.00364					2.29	2.16	2.70	2.39	2.30	2.17
1.	.0516	.0511	.0227	.0212	.0290	.0298	.00236					1.38	1.31	1.70	1.48	1.40	1.33
1.5	.0419	.0416	.0207	.0195	.0211	.0221	.00106	.00173		.00173	.000522	6.51	2.05	6.83	6.63	6.54	2.07
2.	.0356	.0356	.0189	.0176	.0167	.0180	.000594	.00548		.00548	.00251	5.76	1.98	6.08	5.88	5.79	2.00
3.	.0280	.0280	.0162	.0144	.0119	.0136	.000268	.0123	.00000981	.0123	.00743	2.01	1.13	2.20	2.11	2.03	1.15
4.	.0235	.0235	.0142	.0122	.00921	.0113	.000151	.0178	.0000402	.0178	.0118	.955	.642	1.10	1.05	.975	.683
5.	.0202	.0202	.0127	.0105	.00754	.00975	.0000984	.0224	.0000789	.0225	.0155	.330	.258	.439	.413	.353	.280
6.	.0179	.0179	.0115	.00915	.00637	.00875	.0000683	.0261	.000122	.0262	.0185	.161	.135	.251	.237	.185	.158
8.	.0147	.0147	.00978	.00728	.00488	.00737	.0000381	.0321	.000206	.0324	.0230	.0949	.0826	.174	.164	.119	.106
10.	.0125	.0125	.00852	.00605	.00396	.00642	.0000248	.0379	.000286	.0381	.0267	.0625	.0556	.133	.127	.0863	.0789
15.	.00923	.00923	.00654	.00439	.00268	.00485	.0000112	.0482	.000439	.0488	.0315	.0330	.0304	.0935	.0898	.0565	.0531
20.	.00740	.00740	.00539	.00330	.00202	.00410	.0000053	.0565	.000554	.0571	.0344	.0210	.0196	.0743	.0720	.0436	.0407
30.	.00539	.00539	.00404	.00210	.00136	.00330		.0671	.000717	.0677	.0364	.0100	.00961	.0545	.0533	.0324	.0295
40.	.00427	.00427	.00327	.00148	.00103	.00279		.0749	.000832	.0757	.0358	.00605	.00585	.0476	.0470	.0304	.0260
50.	.00358	.00358	.00275	.00113	.000823	.00245		.0806	.000921	.0815	.0356	.00327	.00321	.0439	.0436	.0318	.0251
60.	.00307	.00307	.00239	.000880	.000688	.00219		.0852	.000989	.0860	.0350	.00218	.00215	.0436	.0433	.0341	.0262
80.	.00243	.00243	.00191	.000599	.000519	.00183		.0915	.00110	.0926	.0336	.00161	.00159	.0445	.0445	.0367	.0276
100.	.00202	.00202	.00160	.000447	.000416	.00157		.0961	.00118	.0972	.0318	.00127	.00126	.0453	.0453	.0390	.0290
												.000878	.000869	.0479	.0479	.0430	.0313
												.000660	.000654	.0513	.0513	.0473	.0333
												.000404	.000402	.0585	.0585	.0556	.0364
												.000290	.000290	.0648	.0648	.0628	.0381
												.000186	.000186	.0731	.0731	.0720	.0387
												.000136	.000136	.0800	.0800	.0792	.0376
												.000106	.000106	.0852	.0852	.0843	.0367
												.0000875	.0000875	.0892	.0892	.0886	.0358
												.0000640	.0000640	.0952	.0952	.0946	.0341
												.0000502	.0000502	.0992	.0992	.0989	.0324

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(barns/atom)

E (MeV)	$\sigma^{KN}_{inc,t}$	$\sigma^{BD}_{inc,t}$	$\sigma^{KN}_{inc,a}$	$\sigma^{BD}_{inc,a}$	$\sigma^{KN}_{inc,s}$	$\sigma^{BD}_{inc,s}$	σ_{coh}	$\sigma_{\gamma n}$	$\sigma_{\gamma p}$	$\sigma_{\gamma,t}$	$\sigma_{\gamma,a}$	$\sigma_{\gamma,t}$	$\sigma_{\gamma,a}$	$\sigma_{tot,t}$	$\sigma_{tot,t-coh}$	$\sigma_{tot,a}$	$\sigma_{tot,en}$
.001	57.0	1.17	.111	.00228	56.9	1.17	4710.					---	---	---	---	---	---
N_I .001095	57.0	1.36	.122	.00290	56.8	1.36	4670.					---	---	---	---	---	---
.0015	56.9	2.25	.166	.00656	56.7	2.24	4520.					2210000.	2210000.	2210000.	2210000.	2210000.	2210000.
.002	56.8	3.40	.220	.0132	56.5	3.39	4290.					1100000.	1100000.	1100000.	1100000.	1100000.	1100000.
N_{IV} .002892	56.6	5.38	.316	.0301	56.2	5.35	3890.					575000.	575000.	579000.	575000.	575000.	575000.
.003	56.5	5.60	.328	.0325	56.2	5.57	3840.					251000.	251000.	255000.	251000.	251000.	251000.
N_{IV} .003022	56.5	5.65	.330	.0330	56.2	5.62	3830.					784000.	784000.	788000.	784000.	784000.	784000.
N_{III} .003538	56.4	6.71	.385	.0458	56.0	6.66	3610.					728000.	728000.	732000.	728000.	728000.	728000.
.004	56.3	7.61	.433	.0586	55.9	7.55	3430.					716000.	716000.	720000.	716000.	716000.	716000.
N_{II} .004164	56.3	7.92	.451	.0634	55.8	7.86	3370.					811000.	811000.	815000.	811000.	811000.	811000.
N_I .004482	56.2	8.49	.484	.0731	55.7	8.42	3250.					515000.	515000.	519000.	515000.	515000.	515000.
.005	56.1	9.38	.537	.0899	55.6	9.29	3080.					593000.	593000.	597000.	593000.	593000.	593000.
.006	55.9	11.0	.640	.126	55.3	10.9	2770.					441000.	441000.	444000.	441000.	441000.	441000.
.008	55.5	13.9	.840	.210	54.6	13.7	2260.					401000.	401000.	404000.	401000.	401000.	401000.
.01	55.1	16.5	1.03	.309	54.1	16.2	1880.					477000.	477000.	480000.	477000.	477000.	477000.
L_{III} .014619	54.2	21.1	1.46	.568	52.7	20.5	1290.					391000.	391000.	394000.	391000.	391000.	391000.
.015	54.1	21.4	1.50	.592	52.6	20.8	1260.					444000.	444000.	447000.	444000.	444000.	444000.
L_{II} .017337	53.6	23.1	1.69	.729	51.9	22.4	1060.					330000.	330000.	333000.	330000.	330000.	330000.
L_I .018055	53.5	23.6	1.75	.774	51.7	22.8	1010.					205000.	205000.	208000.	205000.	205000.	205000.
.02	53.1	24.9	1.92	.899	51.2	24.0	888.					96000.	96000.	98300.	96000.	96000.	96000.
.03	51.4	29.6	2.67	1.54	48.7	28.1	516.					53000.	53000.	54900.	53000.	53000.	53000.
.04	49.8	32.5	3.32	2.17	46.4	30.3	342.					19000.	19000.	20300.	19000.	19000.	19000.
.05	48.3	34.2	3.90	2.76	44.4	31.4	243.					47400.	33400.	48700.	47400.	47400.	33400.
.06	46.9	35.1	4.40	3.29	42.5	31.8	181.					44400.	31600.	45700.	44400.	44400.	31600.
.08	44.5	35.8	5.21	4.19	39.3	31.6	110.					31200.	23400.	32300.	31200.	31200.	23400.
K .098404	42.5	35.7	5.80	4.87	36.7	30.8	75.4					43000.	31500.	44100.	43000.	43000.	31500.
.1	42.4	35.8	5.85	4.94	36.5	30.9	73.2					38500.	28600.	39500.	38500.	38500.	28600.
.15	38.1	34.7	6.92	6.30	31.2	28.4	34.6					44900.	33200.	45900.	44900.	44900.	33200.
.2	35.0	32.8	7.56	7.09	27.4	25.7	20.1					34200.	26100.	35100.	34200.	34200.	26100.
.3	30.4	29.3	8.19	7.90	22.2	21.4	9.13					11900.	10000.	12400.	11900.	11900.	10000.
.4	27.2	26.6	8.44	8.11	18.8	18.5	5.17					5520.	4870.	5890.	5550.	5520.	4870.
.5	24.9	24.5	8.48	8.23	16.4	16.3	3.35					3020.	2730.	3300.	3050.	3020.	2730.
.6	23.0	22.7	8.45	8.17	14.6	14.5	2.32					1850.	1700.	2070.	1890.	1850.	1700.
.8	20.2	20.0	8.26	7.94	11.9	12.1	1.31					843.	793.	989.	879.	848.	797.
1.	18.2	18.1	7.99	7.49	10.2	10.6	.850					470.	447.	581.	506.	476.	452.
1.5	14.8	14.7	7.30	6.88	7.46	7.82	.381	.625		.625	.188	2200.	695.	2310.	2240.	2210.	700.
2.	12.6	12.6	6.68	6.24	5.91	6.36	.215	1.97		1.97	.896	2110.	690.	2220.	2150.	2120.	695.
3.	9.90	9.88	5.71	5.08	4.18	4.80	.0963	4.40	.00346	4.40	2.63	730.	402.	799.	765.	737.	408.
4.	8.27	8.27	5.02	4.26	3.25	3.99	.0540	6.37	.0142	6.38	4.21	347.	230.	400.	380.	355.	237.
5.	7.14	7.14	4.49	3.69	2.66	3.45	.0353	8.00	.0279	8.03	5.52	120.	93.1	158.	149.	128.	101.
6.	6.31	6.31	4.07	3.22	2.25	3.09	.0245	9.30	.0431	9.34	6.56	59.1	49.2	90.9	85.7	67.5	57.3
8.	5.17	5.17	3.45	2.56	1.72	2.61	.0138	11.4	.0726	11.5	8.10	34.8	30.1	62.6	59.3	43.3	38.3
10.	4.40	4.40	3.01	2.13	1.39	2.27	.00888	13.4	.100	13.5	9.36	22.9	20.3	47.9	45.6	31.3	28.5
15.	3.26	3.26	2.31	1.54	.944	1.72	.00403	17.2	.155	17.4	11.2	12.1	11.1	33.4	32.1	20.4	19.0
20.	2.61	2.61	1.90	1.16	.715	1.45	.00192	20.1	.195	20.3	12.2	7.70	7.18	26.6	25.8	15.7	14.7
30.	1.90	1.90	1.42	.737	.481	1.16		23.9	.252	24.2	12.9	3.68	3.51	19.4	19.0	11.6	10.6
40.	1.51	1.51	1.15	.522	.363	.988		26.6	.293	26.9	12.6	2.23	2.15	17.0	16.8	10.9	9.29
50.	1.26	1.26	.972	.397	.291	.863		28.7	.325	29.0	12.5	1.20	1.17	15.6	15.5	11.3	8.84
60.	1.09	1.09	.844	.313	.243	.777		30.3	.349	30.6	12.3	.800	.787	15.5	15.4	12.2	9.28
80.	.857	.857	.674	.212	.183	.645		32.6	.386	33.0	11.8	.596	.588	15.8	15.8	13.1	9.80
100.	.712	.712	.565	.157	.147	.555		34.3	.415	34.7	11.2	.469	.464	16.1	16.1	13.9	10.2
												.322	.319	17.0	17.0	15.3	11.0
												.242	.240	18.2	18.1	16.8	11.7
												.149	.148	20.8	20.8	19.9	12.9
												.107	.107	23.0	23.0	22.3	13.5
												.0682	.0680	26.2	26.2	25.7	13.7
												.0498	.0497	28.5	28.5	28.1	13.2
												.0390	.0389	30.3	30.3	30.0	12.9
												.0320	.0320	31.7	31.7	31.5	12.6
												.0234	.0234	33.9	33.9	33.7	12.0
												.0183	.0183	35.4	35.4	35.3	11.4

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(cm^2/g = 0.002713 x barns/atom)

E (MeV)	$(\frac{\mu}{\rho})^{KN}_{inc,t}$	$(\frac{\mu}{\rho})^{BD}_{inc,t}$	$(\frac{\mu}{\rho})^{KN}_{inc,a}$	$(\frac{\mu}{\rho})^{BD}_{inc,a}$	$(\frac{\mu}{\rho})^{KN}_{inc,s}$	$(\frac{\mu}{\rho})^{BD}_{inc,s}$	$(\frac{\mu}{\rho})_{coh}$	$(\frac{\mu}{\rho})_{\kappa_n}$	$(\frac{\mu}{\rho})_{\kappa_e}$	$(\frac{\mu}{\rho})_{\kappa,t}$	$(\frac{\mu}{\rho})_{\kappa,a}$	$(\frac{\mu}{\rho})_{\tau,t}$	$(\frac{\mu}{\rho})_{\tau,a}$	$(\frac{\mu}{\rho})_{tot,t}$	$(\frac{\mu}{\rho})_{tot,t-coh}$	$(\frac{\mu}{\rho})_{tot,a}$	$(\frac{\mu}{\rho})_{tot,en}$
.001	.155	.00317	.000301	.0000062	.154	.00317	12.8					---	---	---	---	---	---
M_I .001095	.155	.00369	.000331	.0000079	.154	.00369	12.7					---	---	---	---	---	---
												6000.	6000.	6000.	6000.	6000.	6000.
.0015	.154	.00610	.000450	.0000178	.154	.00608	12.3					2980.	2980.	2980.	2980.	2980.	2980.
.002	.154	.00922	.000597	.0000358	.153	.00920	11.6					1560.	1560.	1570.	1560.	1560.	1560.
M_V .002892	.154	.0146	.000857	.0000817	.152	.0145	10.6					681.	681.	692.	681.	681.	681.
												2130.	2130.	2140.	2130.	2130.	2130.
.003	.153	.0152	.000890	.0000882	.152	.0151	10.4					1980.	1980.	1990.	1980.	1980.	1980.
M_{IV} .003022	.153	.0153	.000895	.0000895	.152	.0152	10.4					1940.	1940.	1950.	1940.	1940.	1940.
												2200.	2200.	2210.	2200.	2200.	2200.
M_{III} .003538	.153	.0182	.00104	.000124	.152	.0181	9.79					1400.	1400.	1410.	1400.	1400.	1400.
												1610.	1610.	1620.	1610.	1610.	1610.
.004	.153	.0206	.00117	.000159	.152	.0205	9.31					1200.	1200.	1200.	1200.	1200.	1200.
M_{II} .004164	.153	.0215	.00122	.000172	.151	.0213	9.14					1090.	1090.	1100.	1090.	1090.	1090.
												1290.	1290.	1300.	1290.	1290.	1290.
M_I .004482	.152	.0230	.00131	.000198	.151	.0228	8.82					1060.	1060.	1070.	1060.	1060.	1060.
												1200.	1200.	1210.	1200.	1200.	1200.
.005	.152	.0254	.00146	.000244	.151	.0252	8.36					895.	895.	903.	895.	895.	895.
.006	.152	.0298	.00174	.000342	.150	.0296	7.52					556.	556.	564.	556.	556.	556.
.008	.151	.0377	.00228	.000570	.148	.0372	6.13					260.	260.	267.	260.	260.	260.
.01	.149	.0448	.00279	.000838	.147	.0440	5.10					144.	144.	149.	144.	144.	144.
L_{III} .014619	.147	.0572	.00396	.00154	.143	.0556	3.50					51.5	51.5	55.1	51.5	51.5	51.5
												129.	90.6	132.	129.	129.	90.6
.015	.147	.0581	.00407	.00161	.143	.0564	3.42					120.	85.7	124.	120.	120.	85.7
L_{II} .017337	.145	.0627	.00458	.00198	.141	.0608	2.88					84.6	63.5	87.6	84.6	84.6	63.5
												117.	85.5	120.	117.	117.	85.5
L_I .018055	.145	.0640	.00475	.00210	.140	.0619	2.74					104.	77.6	107.	104.	104.	77.6
												122.	90.1	125.	122.	122.	90.1
.02	.144	.0676	.00521	.00244	.139	.0651	2.41					92.8	70.8	95.2	92.8	92.8	70.8
.03	.139	.0803	.00724	.00418	.132	.0762	1.40					32.3	27.1	33.6	32.3	32.3	27.1
.04	.135	.0882	.00901	.00589	.126	.0822	.928					15.0	13.2	16.0	15.1	15.0	13.2
.05	.131	.0928	.0106	.00749	.120	.0852	.659					8.19	7.41	8.95	8.27	8.19	7.41
.06	.127	.0952	.0119	.00893	.115	.0863	.491					5.02	4.61	5.62	5.13	5.02	4.61
.08	.121	.0971	.0141	.0114	.107	.0857	.298					2.29	2.15	2.68	2.38	2.30	2.16
K .098404	.115	.0969	.0157	.0132	.0996	.0836	.205					1.28	1.21	1.58	1.37	1.29	1.23
												5.97	1.89	6.27	6.08	6.00	1.90
.1	.115	.0971	.0159	.0134	.0990	.0838	.199					5.72	1.87	6.02	5.83	5.75	1.89
.15	.103	.0941	.0188	.0171	.0846	.0770	.0939					1.98	1.09	2.17	2.08	2.00	1.11
.2	.0950	.0890	.0205	.0192	.0743	.0697	.0545					.941	.624	1.09	1.03	.963	.643
.3	.0825	.0795	.0222	.0214	.0602	.0581	.0248					.326	.253	.429	.404	.347	.274
.4	.0738	.0722	.0229	.0220	.0510	.0502	.0140					.160	.133	.247	.233	.183	.155
.5	.0676	.0665	.0230	.0223	.0445	.0442	.00909					.0944	.0817	.170	.161	.117	.104
.6	.0624	.0616	.0229	.0222	.0396	.0393	.00629					.0621	.0551	.130	.124	.0849	.0773
.8	.0548	.0543	.0224	.0215	.0323	.0328	.00355					.0328	.0301	.0906	.0871	.0553	.0515
1.	.0494	.0491	.0217	.0203	.0277	.0288	.00231					.0209	.0195	.0722	.0700	.0426	.0399
1.5	.0402	.0399	.0198	.0187	.0202	.0212	.00103	.00170		.00170	.000510	.00998	.00952	.0524	.0515	.0315	.0288
2.	.0342	.0342	.0181	.0169	.0160	.0173	.000583	.00534		.00534	.00243	.00605	.00583	.0461	.0456	.0296	.0252
3.	.0269	.0268	.0155	.0138	.0113	.0130	.000261	.0119	.00000939	.0119	.00714	.00326	.00317	.0423	.0421	.0307	.0241
4.	.0224	.0224	.0136	.0116	.00882	.0108	.000147	.0173	.0000385	.0173	.0114	.00217	.00214	.0421	.0418	.0331	.0252
5.	.0194	.0194	.0122	.0100	.00722	.00936	.0000958	.0217	.0000757	.0218	.0150	.00162	.00160	.0429	.0429	.0355	.0266
6.	.0171	.0171	.0110	.00874	.00610	.00838	.0000665	.0252	.000117	.0253	.0178	.00127	.00126	.0437	.0437	.0377	.0277
8.	.0140	.0140	.00936	.00695	.00467	.00708	.0000374	.0309	.000196	.0312	.0220	.000874	.000865	.0461	.0461	.0415	.0298
10.	.0119	.0119	.00817	.00578	.00377	.00616	.0000241	.0364	.000271	.0366	.0254	.000657	.000651	.0494	.0491	.0456	.0317
15.	.00884	.00884	.00627	.00418	.00256	.00467	.0000109	.0467	.000421	.0472	.0304	.000404	.000402	.0564	.0564	.0540	.0350
20.	.00708	.00708	.00515	.00315	.00194	.00393	.0000052	.0545	.000529	.0551	.0331	.000290	.000290	.0624	.0624	.0605	.0366
30.	.00515	.00515	.00385	.00200	.00130	.00315		.0648	.000684	.0657	.0350	.000185	.000184	.0711	.0711	.0697	.0372
40.	.00410	.00410	.00312	.00142	.000985	.00268		.0722	.000795	.0730	.0342	.000135	.000135	.0773	.0773	.0762	.0358
50.	.00342	.00342	.00264	.00108	.000789	.00234		.0779	.000882	.0787	.0339	.000106	.000106	.0822	.0822	.0814	.0350
60.	.00296	.00296	.00229	.000849	.000659	.00211		.0822	.000947	.0830	.0334	.0000868	.0000868	.0860	.0860	.0855	.0342
80.	.00233	.00233	.00183	.000575	.000496	.00175		.0884	.00105	.0895	.0320	.0000635	.0000635	.0920	.0920	.0914	.0326
100.	.00193	.00193	.00153	.000426	.000399	.00151		.0931	.00113	.0941	.0304	.0000496	.0000496	.0960	.0960	.0958	.0309

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(barns/atom)

E (MeV)	KN $\sigma_{inc,t}$	BD $\sigma_{inc,t}$	KN $\sigma_{inc,a}$	BD $\sigma_{inc,a}$	KN $\sigma_{inc,s}$	BD $\sigma_{inc,s}$	σ_{coh}	$\sigma_{\gamma n}$	$\sigma_{\gamma e}$	$\sigma_{\gamma,t}$	$\sigma_{\gamma,a}$	$\sigma_{\gamma,t}$	$\sigma_{\gamma,a}$	$\sigma_{tot,t}$	$\sigma_{tot,t-coh}$	$\sigma_{tot,a}$	$\sigma_{tot,en}$
.001	57.6	1.54	.112	.00300	57.5	1.54	4780.					---	---	---	---	---	---
N_I .001150	57.6	1.85	.129	.00414	57.5	1.85	4720.					---	---	---	---	---	---
.0015	57.5	2.60	.168	.00758	57.4	2.59	4580.					2070000.	2070000.	2070000.	2070000.	2070000.	2070000.
.002	57.4	3.70	.223	.0144	57.2	3.69	4360.					1150000.	1150000.	1150000.	1150000.	1150000.	1150000.
.003	57.2	5.86	.332	.0340	56.9	5.83	3910.					599000.	599000.	603000.	599000.	599000.	599000.
N_V .003	57.2	5.86	.332	.0340	56.9	5.83	3910.					240000.	240000.	244000.	240000.	240000.	240000.
N_{IV} .003136	57.2	6.14	.346	.0372	56.8	6.10	3850.					240000.	240000.	244000.	240000.	240000.	240000.
N_{III} .003664	57.1	7.21	.403	.0509	56.7	7.16	3620.					751000.	751000.	755000.	751000.	751000.	751000.
.004	57.0	7.86	.438	.0605	56.5	7.80	3490.					685000.	685000.	689000.	685000.	685000.	685000.
N_{II} .004325	56.9	8.46	.473	.0703	56.4	8.39	3370.					777000.	777000.	781000.	777000.	777000.	777000.
N_I .004652	56.8	9.04	.507	.0807	56.3	8.96	3250.					495000.	495000.	499000.	495000.	495000.	495000.
.005	56.8	9.64	.544	.0923	56.2	9.55	3130.					570000.	570000.	574000.	570000.	570000.	570000.
.006	56.5	11.2	.647	.128	55.9	11.1	2820.					460000.	460000.	463000.	460000.	460000.	460000.
.008	56.1	14.1	.849	.213	55.3	13.9	2310.					383000.	383000.	386000.	383000.	383000.	383000.
.01	55.7	16.7	1.04	.313	54.7	16.4	1920.					456000.	456000.	459000.	456000.	456000.	456000.
.015	54.7	21.6	1.51	.597	53.2	21.0	1290.					374000.	374000.	377000.	374000.	374000.	374000.
L_{III} .015030	54.7	21.7	1.51	.600	53.2	21.1	1280.					424000.	424000.	427000.	424000.	424000.	424000.
L_{II} .017904	54.2	23.8	1.76	.774	52.4	23.0	1050.					350000.	350000.	353000.	350000.	350000.	350000.
L_I .018639	54.0	24.3	1.82	.821	52.2	23.5	997.					216000.	216000.	219000.	216000.	216000.	216000.
.02	53.8	25.2	1.94	.909	51.8	24.3	913.					100000.	100000.	102000.	100000.	100000.	100000.
.03	52.0	29.9	2.70	1.56	49.3	28.3	530.					55900.	55900.	57800.	55900.	55900.	55900.
.04	50.3	32.8	3.36	2.19	47.0	30.6	352.					18600.	18600.	19900.	18600.	18600.	18600.
.05	48.8	34.5	3.94	2.78	44.9	31.7	250.					18500.	18500.	19800.	18500.	18500.	18500.
.06	47.5	35.5	4.45	3.33	43.0	32.2	186.					45900.	32300.	47200.	45900.	45900.	32300.
.08	45.0	36.2	5.27	4.24	39.7	32.0	113.					29900.	22500.	31000.	29900.	29900.	22500.
.1	42.9	36.1	5.92	4.98	37.0	31.1	75.4					41300.	30200.	42400.	41300.	41300.	30200.
K .101137	42.8	36.1	5.95	5.02	36.8	31.1	73.9					37000.	27500.	38000.	37000.	37000.	27500.
.15	38.6	35.1	7.00	6.37	31.6	28.7	35.6					43100.	31800.	44100.	43100.	43100.	31800.
.2	35.4	33.2	7.64	7.18	27.7	26.0	20.6					35600.	26900.	36500.	35600.	35600.	26900.
.3	30.7	29.7	8.29	8.01	22.5	21.7	9.40					12300.	10300.	12900.	12300.	12300.	10300.
.4	27.5	26.9	8.53	8.20	19.0	18.7	5.32					5770.	5070.	6150.	5800.	5770.	5070.
.5	25.2	24.7	8.58	8.30	16.6	16.4	3.45					3180.	2870.	3440.	3210.	3180.	2870.
.6	23.3	23.0	8.55	8.28	14.7	14.7	2.40					1950.	1790.	2170.	1990.	1950.	1790.
.8	20.4	20.3	8.36	8.04	12.1	12.3	1.35					879.	826.	1030.	915.	884.	830.
1.	18.4	18.3	8.08	7.58	10.3	10.7	.872					471.	448.	582.	507.	477.	453.
1.5	14.9	14.9	7.38	6.97	7.54	7.93	.392	.645			.645	458.	436.	568.	494.	464.	441.
2.	12.7	12.7	6.76	6.29	5.97	6.41	.222	2.03			2.03	2130.	673.	2240.	2170.	2140.	678.
3.	10.0	10.0	5.78	5.14	4.23	4.86	.0992	4.52	.00350	4.52	.924	760.	409.	831.	795.	767.	415.
4.	8.37	8.37	5.08	4.32	3.29	4.05	.0555	6.50	.0143	6.51	2.71	361.	236.	415.	394.	369.	243.
5.	7.23	7.23	4.54	3.73	2.64	3.50	.0363	8.18	.0282	8.21	4.29	126.	96.9	165.	156.	134.	105.
6.	6.39	6.39	4.11	3.25	2.27	3.14	.0252	9.50	.0436	9.54	5.64	62.0	51.3	94.2	88.9	70.5	59.5
8.	5.23	5.23	3.49	2.59	1.74	2.64	.0142	11.6	.0732	11.7	6.69	36.5	31.4	64.6	61.2	45.1	39.7
10.	4.45	4.45	3.04	2.15	1.41	2.20	.00914	13.7	.102	13.8	8.23	23.9	21.1	49.3	46.9	32.4	29.6
15.	3.29	3.29	2.34	1.55	.955	1.74	.00416	17.5	.157	17.7	9.54	12.7	11.6	34.3	33.0	21.1	19.6
20.	2.64	2.64	1.92	1.17	.723	1.47	.00200	20.5	.197	20.7	11.4	8.10	7.54	27.3	26.4	16.2	15.1
30.	1.92	1.92	1.44	.743	.486	1.18		24.5	.255	24.8	12.3	3.86	3.68	19.8	19.4	11.9	10.8
40.	1.53	1.53	1.16	.528	.347	1.00		27.3	.296	27.6	13.1	2.34	2.26	17.3	17.1	11.1	9.47
50.	1.28	1.28	.983	.402	.294	.878		29.3	.329	29.6	12.9	1.27	1.24	15.9	15.8	11.6	9.09
60.	1.10	1.10	.854	.315	.246	.785		30.9	.352	31.3	12.7	.847	.832	15.8	15.7	12.4	9.44
80.	.847	.847	.682	.214	.185	.653		33.3	.390	33.7	12.4	.629	.620	16.1	16.1	13.4	9.90
100.	.720	.720	.572	.158	.149	.562		34.9	.420	35.3	12.0	.493	.487	16.4	16.4	14.1	10.4
											11.3	.340	.337	17.3	17.3	15.5	11.2
												.257	.255	18.5	18.5	17.1	11.9
												.157	.156	21.2	21.1	20.2	13.1
												.112	.112	23.5	23.5	22.7	13.6
												.0719	.0717	26.8	26.8	26.3	13.9
												.0524	.0523	29.2	29.2	28.8	13.5
												.0410	.0409	30.9	30.9	30.6	13.1
												.0336	.0336	32.4	32.4	32.2	12.7
												.0245	.0245	34.6	34.6	34.4	12.2
												.0192	.0192	36.0	36.0	35.9	11.5

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(cm^2/g = 0.002701 × barns/atom)

E (MeV)	$(\frac{\mu}{\rho})^{KN}_{inc,t}$	$(\frac{\mu}{\rho})^{BD}_{inc,t}$	$(\frac{\mu}{\rho})^{KN}_{inc,a}$	$(\frac{\mu}{\rho})^{BD}_{inc,a}$	$(\frac{\mu}{\rho})^{KN}_{inc,s}$	$(\frac{\mu}{\rho})^{BD}_{inc,s}$	$(\frac{\mu}{\rho})_{coh}$	$(\frac{\mu}{\rho})_{\kappa_n}$	$(\frac{\mu}{\rho})_{\kappa_e}$	$(\frac{\mu}{\rho})_{\kappa,t}$	$(\frac{\mu}{\rho})_{\kappa,a}$	$(\frac{\mu}{\rho})_{\tau,t}$	$(\frac{\mu}{\rho})_{\tau,a}$	$(\frac{\mu}{\rho})_{tot,t}$	$(\frac{\mu}{\rho})_{tot,t-coh}$	$(\frac{\mu}{\rho})_{tot,a}$	$(\frac{\mu}{\rho})_{tot,en}$
.001	.156	.00416	.000303	.0000081	.155	.00416	12.9					---	---	---	---	---	---
M_I .001150	.156	.00500	.000348	.0000112	.155	.00500	12.7					---	---	---	---	---	---
.0015	.155	.00702	.000454	.0000205	.155	.00700	12.4					5590.	5590.	5590.	5590.	5590.	5590.
.002	.155	.00999	.000602	.0000389	.154	.00997	11.8					3110.	3110.	3110.	3110.	3110.	3110.
.003	.154	.0158	.000897	.0000918	.154	.0157	10.6					1620.	1620.	1630.	1620.	1620.	1620.
M_V .003	.154	.0158	.000897	.0000918	.154	.0157	10.6					648.	648.	659.	648.	648.	648.
M_{IV} .003136	.154	.0166	.000935	.000100	.153	.0165	10.4					648.	648.	659.	648.	648.	648.
M_{III} .003664	.154	.0195	.00109	.000137	.153	.0193	9.78					2030.	2030.	2040.	2030.	2030.	2030.
.004	.154	.0212	.00118	.000163	.153	.0211	9.43					1850.	1850.	1860.	1850.	1850.	1850.
M_{II} .004325	.154	.0229	.00128	.000190	.152	.0227	9.10					2100.	2100.	2110.	2100.	2100.	2100.
M_I .004652	.153	.0244	.00137	.000218	.152	.0242	8.78					1340.	1340.	1350.	1340.	1340.	1340.
.005	.153	.0260	.00147	.000249	.152	.0258	8.45					1540.	1540.	1550.	1540.	1540.	1540.
.006	.153	.0303	.00175	.000346	.151	.0300	7.62					1240.	1240.	1250.	1240.	1240.	1240.
.008	.152	.0381	.00229	.000575	.149	.0375	6.24					1030.	1030.	1040.	1030.	1030.	1030.
.01	.150	.0451	.00281	.000845	.148	.0443	5.19					1230.	1230.	1240.	1230.	1230.	1230.
.015	.148	.0583	.00408	.00161	.144	.0567	3.48					1010.	1010.	1020.	1010.	1010.	1010.
L_{III} .015030	.148	.0586	.00408	.00162	.144	.0570	3.46					1150.	1150.	1150.	1150.	1150.	1150.
L_{II} .017904	.146	.0643	.00475	.00209	.142	.0621	2.84					945.	945.	953.	945.	945.	945.
L_I .018639	.146	.0656	.00492	.00222	.141	.0635	2.69					583.	583.	592.	583.	583.	583.
.02	.145	.0681	.00524	.00246	.140	.0656	2.47					270.	270.	276.	270.	270.	270.
.03	.140	.0808	.00729	.00421	.133	.0784	1.43					151.	151.	156.	151.	151.	151.
.04	.136	.0886	.00908	.00592	.127	.0827	.951					50.2	50.2	53.7	50.2	50.2	50.2
.05	.132	.0932	.0106	.00751	.121	.0856	.675					50.0	50.0	53.5	50.0	50.0	50.0
.06	.128	.0959	.0120	.00899	.116	.0870	.502					124.	87.2	127.	124.	124.	87.2
.08	.122	.0978	.0142	.0115	.107	.0864	.305					80.8	60.8	83.7	80.8	80.8	60.8
.1	.116	.0975	.0160	.0135	.0999	.0840	.204					112.	81.6	115.	112.	112.	81.6
K .101137	.116	.0975	.0161	.0136	.0994	.0840	.200					99.9	74.3	103.	99.9	99.9	74.3
.15	.104	.0948	.0189	.0172	.0854	.0775	.0962					116.	85.9	119.	116.	116.	85.9
.2	.0956	.0897	.0206	.0194	.0748	.0702	.0556					96.2	72.7	98.6	96.2	96.2	72.7
.3	.0829	.0802	.0224	.0216	.0608	.0586	.0254					33.2	27.8	34.8	33.2	33.2	27.8
.4	.0743	.0727	.0230	.0221	.0513	.0505	.0144					15.6	13.7	16.6	15.7	15.6	13.7
.5	.0681	.0667	.0232	.0224	.0448	.0443	.00932					8.59	7.75	9.35	8.67	8.59	7.75
.6	.0629	.0621	.0231	.0224	.0397	.0397	.00648					5.27	4.83	5.86	5.37	5.27	4.83
.8	.0551	.0548	.0226	.0217	.0327	.0332	.00365					2.37	2.23	2.78	2.47	2.39	2.24
1.	.0497	.0494	.0218	.0205	.0278	.0289	.00236					1.27	1.21	1.57	1.37	1.29	1.22
1.5	.0402	.0402	.0199	.0188	.0204	.0214	.00106	.00174		.00174	.000524	1.24	1.18	1.53	1.33	1.25	1.19
2.	.0343	.0343	.0183	.0170	.0161	.0173	.000600	.00548		.00548	.00250	5.75	1.82	6.05	5.86	5.78	1.83
3.	.0270	.0270	.0156	.0139	.0114	.0131	.000268	.0122	.00000945	.0122	.00732	2.05	1.10	2.24	2.15	2.07	1.12
4.	.0226	.0226	.0137	.0117	.00889	.0109	.000150	.0176	.0000386	.0176	.0116	.975	.637	1.12	1.06	.997	.656
5.	.0195	.0195	.0123	.0101	.00727	.00945	.0000980	.0221	.0000762	.0222	.0152	.340	.262	.446	.421	.362	.284
6.	.0173	.0173	.0111	.00878	.00613	.00848	.0000681	.0257	.000118	.0258	.0181	.167	.139	.254	.240	.190	.161
8.	.0141	.0141	.00943	.00700	.00470	.00713	.0000384	.0313	.000198	.0316	.0222	.0986	.0848	.174	.165	.122	.107
10.	.0120	.0120	.00821	.00581	.00381	.00621	.0000247	.0370	.000276	.0373	.0258	.0646	.0570	.133	.127	.0875	.0794
15.	.00889	.00889	.00632	.00419	.00258	.00470	.0000112	.0473	.000424	.0478	.0308	.0343	.0313	.0926	.0891	.0570	.0529
20.	.00713	.00713	.00519	.00316	.00195	.00397	.0000054	.0554	.000532	.0559	.0332	.0219	.0204	.0737	.0713	.0438	.0408
30.	.00519	.00519	.00389	.00201	.00131	.00319		.0662	.000689	.0670	.0354	.0104	.00994	.0535	.0524	.0321	.0292
40.	.00413	.00413	.00313	.00143	.000991	.00270		.0737	.000799	.0745	.0348	.00632	.00610	.0467	.0462	.0300	.0256
50.	.00346	.00346	.00266	.00109	.000794	.00237		.0791	.000889	.0799	.0343	.00343	.00335	.0429	.0427	.0313	.0246
60.	.00297	.00297	.00231	.000851	.000664	.00212		.0835	.000951	.0845	.0335	.00229	.00225	.0427	.0424	.0335	.0255
80.	.00234	.00234	.00184	.000578	.000500	.00176		.0899	.00105	.0910	.0324	.00170	.00167	.0435	.0435	.0362	.0270
100.	.00194	.00194	.00154	.000427	.000402	.00152		.0943	.00113	.0953	.0305	.00133	.00132	.0443	.0443	.0381	.0281
												.000918	.000910	.0467	.0467	.0419	.0303
												.000694	.000689	.0500	.0500	.0462	.0321
												.000424	.000421	.0573	.0570	.0546	.0354
												.000303	.000303	.0635	.0635	.0613	.0367
												.000194	.000194	.0724	.0724	.0710	.0375
												.000142	.000141	.0789	.0789	.0778	.0365
												.000111	.000110	.0835	.0835	.0827	.0354
												.0000908	.0000908	.0875	.0875	.0870	.0343
												.0000662	.0000662	.0935	.0935	.0929	.0330
												.0000519	.0000519	.0972	.0972	.0970	.0311

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(barns/atom)

E (MeV)	KN $\sigma_{inc,t}$	BD $\sigma_{inc,t}$	KN $\sigma_{inc,a}$	BD $\sigma_{inc,a}$	KN $\sigma_{inc,s}$	BD $\sigma_{inc,s}$	σ_{coh}	$\sigma_{\gamma n}$	$\sigma_{\gamma e}$	$\sigma_{\gamma,t}$	$\sigma_{\gamma,a}$	$\sigma_{\gamma,t}$	$\sigma_{\gamma,a}$	$\sigma_{tot,t}$	$\sigma_{tot,t-coh}$	$\sigma_{tot,a}$	$\sigma_{tot,en}$
.001	58.3	1.80	.114	.00351	58.2	1.80	4870.					---	---	---	---	---	---
N_I .001208	58.3	2.26	.137	.00532	58.1	2.25	4780.					---	---	---	---	---	---
.0015	58.2	2.90	.170	.00846	58.0	2.89	4650.					1950000.	1950000.	1950000.	1950000.	1950000.	1950000.
.002	58.1	4.00	.225	.0155	57.9	3.98	4420.					1200000.	1200000.	1200000.	1200000.	1200000.	1200000.
.003	57.9	6.13	.335	.0355	57.5	6.09	3970.					625000.	625000.	629000.	625000.	625000.	625000.
M_V .003109	57.8	6.35	.347	.0381	57.5	6.31	3920.					249000.	249000.	253000.	249000.	249000.	249000.
												230000.	230000.	234000.	230000.	230000.	230000.
M_{IV} .003253	57.8	6.65	.363	.0417	57.4	6.61	3860.					721000.	721000.	725000.	721000.	721000.	721000.
												656000.	656000.	660000.	656000.	656000.	656000.
M_{III} .003791	57.7	7.73	.421	.0564	57.3	7.67	3640.					744000.	744000.	748000.	744000.	744000.	744000.
												477000.	477000.	481000.	477000.	477000.	477000.
.004	57.6	8.13	.444	.0626	57.2	8.07	3550.					548000.	548000.	552000.	548000.	548000.	548000.
M_{II} .004490	57.5	9.02	.496	.0778	57.0	8.94	3370.					480000.	480000.	484000.	480000.	480000.	480000.
												367000.	367000.	370000.	367000.	367000.	367000.
M_I .004824	57.5	9.61	.531	.0889	56.9	9.52	3250.					436000.	436000.	439000.	436000.	436000.	436000.
												358000.	358000.	361000.	358000.	358000.	358000.
.005	57.4	9.91	.550	.0949	56.9	9.82	3190.					405000.	405000.	408000.	405000.	405000.	405000.
.006	57.2	11.5	.655	.132	56.5	11.4	2880.					367000.	367000.	370000.	367000.	367000.	367000.
.008	56.8	14.4	.859	.218	55.9	14.2	2360.					227000.	227000.	230000.	227000.	227000.	227000.
.01	56.4	16.9	1.06	.317	55.3	16.6	1970.					106000.	106000.	108000.	106000.	106000.	106000.
.015	55.3	21.9	1.53	.606	53.8	21.3	1310.					58500.	58500.	60500.	58500.	58500.	58500.
L_{III} .015446	55.3	22.3	1.57	.632	53.7	21.7	1270.					19400.	19400.	20700.	19400.	19400.	19400.
												18100.	18100.	19400.	18100.	18100.	18100.
L_{II} .018484	54.7	24.5	1.83	.821	52.8	23.7	1030.					44500.	31200.	45800.	44500.	44500.	31200.
												28700.	21600.	29800.	28700.	28700.	21600.
L_I .019237	54.5	25.0	1.90	.869	52.6	24.1	981.					39700.	29000.	40800.	39700.	39700.	29000.
												35500.	26300.	36500.	35500.	35500.	26300.
.02	54.4	25.4	1.96	.917	52.4	24.5	934.					41400.	30600.	42400.	41400.	41400.	30600.
.03	52.6	30.1	2.74	1.57	49.9	28.5	543.					37000.	27700.	38000.	37000.	37000.	27700.
.04	50.9	33.1	3.40	2.21	47.5	30.9	360.					12900.	10700.	13500.	12900.	12900.	10700.
.05	49.4	34.8	3.99	2.81	45.4	32.0	256.					6040.	5280.	6430.	6070.	6040.	5280.
.06	48.0	35.8	4.50	3.36	43.5	32.4	191.					3340.	3000.	3630.	3370.	3340.	3000.
.08	45.5	36.5	5.33	4.27	40.2	32.2	116.					2040.	1870.	2270.	2040.	2040.	1870.
.1	43.4	36.5	5.98	5.04	37.4	31.5	77.4					926.	868.	1080.	963.	931.	872.
K .103922	43.0	36.6	6.09	5.19	36.9	31.4	72.1					500.	475.	614.	536.	506.	480.
												447.	425.	556.	484.	453.	430.
.15	39.0	35.5	7.08	6.44	32.0	29.1	36.5					2060.	651.	2170.	2100.	2070.	656.
.2	35.8	33.6	7.73	7.26	28.0	26.3	21.2					790.	416.	862.	826.	797.	422.
.3	31.1	30.0	8.38	8.09	22.7	21.9	9.67					378.	244.	433.	412.	386.	251.
.4	27.9	27.2	8.63	8.30	19.2	18.9	5.47					132.	101.	172.	162.	140.	109.
.5	25.4	25.0	8.68	8.40	16.8	16.6	3.51					65.3	53.7	98.0	92.5	73.9	62.0
.6	23.5	23.2	8.65	8.35	14.9	14.8	2.47					38.3	32.9	66.8	63.3	47.0	41.3
.8	20.7	20.5	8.45	8.12	12.2	12.4	1.39					25.3	22.3	51.0	48.5	33.9	30.6
1.	18.6	18.5	8.18	7.66	10.4	10.8	.900					13.4	12.2	35.3	33.9	21.8	20.3
1.5	15.1	15.0	7.47	7.02	7.63	7.98	.405	.670		.670	.201	8.50	7.90	27.9	27.0	16.7	15.6
2.	12.9	12.8	6.83	6.34	6.04	6.46	.228	2.10		2.10	.955	4.08	3.89	20.2	19.7	12.2	11.1
3.	10.1	10.1	5.84	5.18	4.28	4.92	.102	4.65	.00354	4.65	2.78	2.48	2.39	17.6	17.4	11.4	9.69
4.	8.47	8.47	5.14	4.36	3.33	4.11	.0571	6.66	.0145	6.67	4.40	1.33	1.30	16.2	16.1	11.8	9.26
5.	7.31	7.31	4.59	3.76	2.72	3.55	.0373	8.36	.0285	8.39	5.75	.894	.878	16.1	16.0	12.7	9.64
6.	6.46	6.46	4.16	3.28	2.30	3.18	.0259	9.70	.0440	9.74	6.82	.663	.654	16.4	16.4	13.6	10.2
8.	5.29	5.29	3.53	2.61	1.76	2.88	.0146	11.8	.0740	11.9	8.36	.521	.515	16.7	16.7	14.4	10.6
10.	4.50	4.50	3.08	2.17	1.42	2.33	.00941	14.0	.103	14.1	9.73	.359	.356	17.6	17.5	15.8	11.3
15.	3.33	3.33	2.37	1.57	.966	1.76	.00429	17.9	.158	18.1	11.6	.270	.268	18.9	18.9	17.4	12.2
20.	2.67	2.67	1.94	1.18	.731	1.49	.00208	21.0	.199	21.2	12.6	.165	.164	21.6	21.6	20.6	13.3
30.	1.95	1.95	1.45	.753	.492	1.20		25.0	.258	25.3	13.3	.119	.119	24.0	24.0	23.3	13.9
40.	1.55	1.55	1.18	.533	.371	1.02		27.8	.300	28.1	13.1	.0758	.0756	27.3	27.3	26.8	14.1
50.	1.29	1.29	.994	.405	.297	.885		29.8	.332	30.1	12.8	.0551	.0550	29.7	29.7	29.3	13.7
60.	1.11	1.11	.863	.316	.249	.794		31.6	.356	32.0	12.7	.0430	.0429	31.4	31.4	31.1	13.2
80.	.877	.877	.690	.216	.187	.661		34.0	.394	34.4	12.2	.0353	.0353	33.1	33.1	32.9	13.1
100.	.729	.729	.578	.160	.150	.569		35.8	.424	36.2	11.6	.0258	.0258	35.3	35.3	35.1	12.4
												.0201	.0201	36.9	36.9	36.8	11.8

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(cm²/g = 0.002665 x barns/atom)

E (MeV)	$(\frac{\mu}{\rho})^{KN}_{inc,t}$	$(\frac{\mu}{\rho})^{BD}_{inc,t}$	$(\frac{\mu}{\rho})^{KN}_{inc,a}$	$(\frac{\mu}{\rho})^{BD}_{inc,a}$	$(\frac{\mu}{\rho})^{KN}_{inc,s}$	$(\frac{\mu}{\rho})^{BD}_{inc,s}$	$(\frac{\mu}{\rho})_{coh}$	$(\frac{\mu}{\rho})_{\kappa_n}$	$(\frac{\mu}{\rho})_{\kappa_e}$	$(\frac{\mu}{\rho})_{\kappa,t}$	$(\frac{\mu}{\rho})_{\kappa,a}$	$(\frac{\mu}{\rho})_{\tau,t}$	$(\frac{\mu}{\rho})_{\tau,a}$	$(\frac{\mu}{\rho})_{tot,t}$	$(\frac{\mu}{\rho})_{tot,t-cor.}$	$(\frac{\mu}{\rho})_{tot,a}$	$(\frac{\mu}{\rho})_{tot,en}$
.001	.155	.00480	.000304	.0000094	.155	.00480	13.0					---	---	---	---	---	---
N_I .001208	.155	.00602	.000365	.0000142	.155	.00600	12.7					---	---	---	---	---	---
												5200.	5200.	5200.	5200.	5200.	5200.
.0015	.155	.00773	.000453	.0000225	.155	.00770	12.4					3200.	3200.	3200.	3200.	3200.	3200.
.002	.155	.0107	.000600	.0000413	.154	.0106	11.8					1670.	1680.	1670.	1670.	1670.	1670.
.003	.154	.0163	.000893	.0000946	.153	.0162	10.6					664.	674.	664.	664.	664.	664.
M_V .003109	.154	.0169	.000925	.000102	.153	.0168	10.4					613.	624.	613.	613.	613.	613.
												1920.	1930.	1920.	1920.	1920.	1920.
M_{IV} .003253	.154	.0177	.000967	.000111	.153	.0176	10.3					1750.	1760.	1750.	1750.	1750.	1750.
												1980.	1990.	1980.	1980.	1980.	1980.
M_{III} .003791	.154	.0206	.00112	.000150	.153	.0204	9.70					1270.	1280.	1270.	1270.	1270.	1270.
												1460.	1470.	1460.	1460.	1460.	1460.
.004	.154	.0217	.00118	.000167	.152	.0215	9.46					1280.	1290.	1280.	1280.	1280.	1280.
M_{II} .004490	.153	.0240	.00132	.000207	.152	.0238	8.98					978.	986.	978.	978.	978.	978.
												1160.	1170.	1160.	1160.	1160.	1160.
M_I .004824	.153	.0256	.00142	.000237	.152	.0254	8.66					954.	962.	954.	954.	954.	954.
												1080.	1090.	1080.	1080.	1080.	1080.
.005	.153	.0264	.00147	.000253	.152	.0262	8.50					978.	986.	978.	978.	978.	978.
.006	.152	.0306	.00175	.000352	.151	.0304	7.68					605.	613.	605.	605.	605.	605.
.008	.151	.0384	.00229	.000581	.149	.0378	6.29					282.	288.	282.	282.	282.	282.
.01	.150	.0450	.00282	.000845	.147	.0442	5.25					156.	161.	156.	156.	156.	156.
.015	.147	.0584	.00408	.00161	.143	.0568	3.49					51.7	51.7	55.2	51.7	51.7	51.7
L_{III} .015446	.147	.0594	.00418	.00168	.143	.0578	3.38					48.2	48.2	51.7	48.2	48.2	48.2
												119.	83.1	122.	119.	119.	83.1
L_{II} .018484	.146	.0653	.00488	.00219	.141	.0632	2.74					76.5	57.6	79.4	76.5	76.5	57.6
												106.	77.3	109.	106.	106.	77.3
L_I .019237	.145	.0666	.00506	.00232	.140	.0642	2.61					94.6	70.1	97.3	94.6	94.6	70.1
												110.	81.5	113.	110.	110.	81.5
.02	.145	.0677	.00522	.00244	.140	.0653	2.49					98.6	73.8	101.	98.6	98.6	73.8
.03	.140	.0802	.00730	.00418	.133	.0760	1.45					34.4	28.5	36.0	34.4	34.4	28.5
.04	.136	.0882	.00906	.00589	.127	.0823	.959					16.1	14.1	17.1	16.2	16.1	14.1
.05	.132	.0927	.0106	.00749	.121	.0853	.682					8.90	7.99	9.67	8.98	8.90	7.99
.06	.128	.0954	.0120	.00895	.116	.0863	.509					5.44	4.98	6.05	5.54	5.44	4.98
.08	.121	.0973	.0142	.0114	.107	.0858	.309					2.47	2.31	2.88	2.57	2.48	2.32
.1	.116	.0973	.0159	.0134	.0997	.0839	.206					1.33	1.27	1.64	1.43	1.35	1.28
K .103922	.115	.0975	.0162	.0138	.0983	.0837	.192					1.19	1.13	1.48	1.29	1.21	1.15
												5.49	1.73	5.78	5.60	5.52	1.75
.15	.104	.0946	.0189	.0172	.0853	.0776	.0973					2.11	1.11	2.30	2.20	2.12	1.12
.2	.0954	.0895	.0206	.0193	.0746	.0701	.0565					1.01	.650	1.15	1.10	1.03	.669
.3	.0829	.0799	.0223	.0216	.0605	.0584	.0258					.352	.269	.458	.432	.373	.290
.4	.0744	.0725	.0230	.0221	.0512	.0504	.0146					.174	.143	.261	.247	.197	.165
.5	.0677	.0666	.0231	.0224	.0448	.0442	.00935					.102	.0877	.178	.169	.125	.110
.6	.0626	.0618	.0231	.0223	.0397	.0394	.00658					.0674	.0594	.136	.129	.0903	.0815
.8	.0552	.0546	.0225	.0216	.0325	.0330	.00370					.0357	.0325	.0941	.0903	.0581	.0541
1.	.0496	.0493	.0218	.0204	.0277	.0288	.00240					.0227	.0211	.0744	.0720	.0445	.0416
1.5	.0402	.0400	.0199	.0187	.0203	.0213	.00108	.00179		.00179	.000536	.0109	.0104	.0538	.0525	.0325	.0296
2.	.0344	.0341	.0182	.0169	.0161	.0172	.000608	.00560		.00560	.00255	.00661	.00637	.0469	.0464	.0304	.0258
3.	.0269	.0269	.0156	.0138	.0114	.0131	.000272	.0124	.00000943	.0124	.00741	.00354	.00346	.0432	.0429	.0314	.0247
4.	.0226	.0226	.0137	.0116	.00887	.0110	.000152	.0177	.0000386	.0178	.0117	.00238	.00234	.0429	.0426	.0338	.0257
5.	.0195	.0195	.0122	.0100	.00725	.00946	.0000994	.0223	.0000760	.0224	.0153	.00177	.00174	.0437	.0437	.0362	.0272
6.	.0172	.0172	.0111	.00874	.00613	.00847	.0000690	.0259	.000117	.0260	.0182	.00139	.00137	.0445	.0445	.0384	.0282
8.	.0141	.0141	.00941	.00696	.00469	.00714	.0000389	.0314	.000197	.0317	.0223	.000957	.000949	.0469	.0466	.0421	.0301
10.	.0120	.0120	.00821	.00578	.00378	.00621	.0000251	.0373	.000274	.0376	.0259	.000720	.000714	.0504	.0504	.0466	.0325
15.	.00887	.00887	.00632	.00418	.00257	.00469	.0000114	.0477	.000421	.0482	.0309	.000440	.000437	.0576	.0576	.0549	.0354
20.	.00712	.00712	.00517	.00314	.00195	.00397	.0000055	.0560	.000530	.0565	.0336	.000317	.000317	.0640	.0640	.0621	.0370
30.	.00520	.00520	.00386	.00201	.00131	.00320		.0666	.000688	.0674	.0354	.000202	.000201	.0728	.0728	.0714	.0376
40.	.00413	.00413	.00314	.00142	.000989	.00272		.0741	.000800	.0749	.0349	.000147	.000147	.0792	.0792	.0781	.0365
50.	.00344	.00344	.00265	.00108	.000792	.00236		.0794	.000885	.0802	.0341	.000115	.000114	.0837	.0837	.0829	.0352
60.	.00296	.00296	.00230	.000842	.000664	.00212		.0842	.000949	.0853	.0338	.0000941	.0000941	.0882	.0882	.0877	.0340
80.	.00234	.00234	.00184	.000576	.000498	.00176		.0906	.00105	.0917	.0325	.0000688	.0000688	.0941	.0941	.0935	.0330
100.	.00194	.00194	.00154	.000426	.000400	.00152		.0954	.00113	.0965	.0309	.0000536	.0000536	.0983	.0983	.0981	.0314

89 ACTINIUM
(barns/atom)

E (MeV)	KN $\sigma_{inc,t}$	BD $\sigma_{inc,t}$	KN $\sigma_{inc,a}$	BD $\sigma_{inc,a}$	KN $\sigma_{inc,s}$	BD $\sigma_{inc,s}$	σ_{coh}	$\sigma_{x,n}$	$\sigma_{x,e}$	$\sigma_{x,t}$	$\sigma_{x,a}$	$\sigma_{r,t}$	$\sigma_{r,a}$	$\sigma_{tot,t}$	$\sigma_{tot,t-coh}$	$\sigma_{tot,a}$	$\sigma_{tot,en}$
.001	59.0	1.83	.115	.00356	58.9	1.83	4980.					---	---	---	---	---	---
N_I .001269	58.9	2.43	.146	.00600	58.8	2.42	4860.					---	---	---	---	---	---
												1820000.	1820000.	1820000.	1820000.	1820000.	1820000.
.0015	58.9	2.95	.172	.00861	58.7	2.94	4750.					1250000.	1250000.	1250000.	1250000.	1250000.	1250000.
.002	58.7	4.06	.228	.0158	58.5	4.04	4510.					653000.	653000.	658000.	653000.	653000.	653000.
.003	58.5	6.24	.339	.0362	58.2	6.20	4040.					259000.	259000.	263000.	259000.	259000.	259000.
N_V .003219	58.5	6.69	.363	.0416	58.1	6.65	3950.					221000.	221000.	225000.	221000.	221000.	221000.
												693000.	693000.	697000.	693000.	693000.	693000.
N_{IV} .003371	58.4	7.01	.380	.0456	58.1	6.96	3880.					630000.	630000.	634000.	630000.	630000.	630000.
												714000.	714000.	718000.	714000.	714000.	714000.
N_{III} .003918	58.3	8.11	.440	.0611	57.9	8.05	3650.					459000.	459000.	463000.	459000.	459000.	459000.
												528000.	528000.	532000.	528000.	528000.	528000.
.004	58.3	8.27	.449	.0636	57.8	8.21	3620.					504000.	504000.	508000.	504000.	504000.	504000.
N_{II} .004658	58.1	9.47	.520	.0846	57.6	9.39	3370.					351000.	351000.	354000.	351000.	351000.	351000.
												418000.	418000.	421000.	418000.	418000.	418000.
.005	58.1	10.1	.556	.0967	57.5	10.0	3250.					343000.	343000.	346000.	343000.	343000.	343000.
N_I .005002	58.1	10.1	.556	.0968	57.5	10.0	3250.					343000.	343000.	346000.	343000.	343000.	343000.
												387000.	387000.	390000.	387000.	387000.	387000.
.006	57.8	11.7	.662	.134	57.2	11.6	2930.					239000.	239000.	242000.	239000.	239000.	239000.
.008	57.4	14.5	.869	.220	56.6	14.3	2410.					111000.	111000.	113000.	111000.	111000.	111000.
.01	57.0	17.1	1.07	.320	55.9	16.8	2010.					62000.	62000.	64000.	62000.	62000.	62000.
.015	56.0	22.1	1.55	.611	54.4	21.5	1350.					20500.	20500.	21900.	20500.	20500.	20500.
L_{III} .015870	55.8	22.8	1.62	.663	54.2	22.1	1270.					17600.	17600.	18900.	17600.	17600.	17600.
												43100.	30300.	44400.	43100.	43100.	30300.
L_{II} .019083	55.2	25.1	1.90	.866	53.3	24.2	1020.					27500.	20700.	28500.	27500.	27500.	20700.
												38100.	27900.	39100.	38100.	38100.	27900.
L_I .019845	55.0	25.6	1.97	.916	53.1	24.7	971.					34100.	25400.	35100.	34100.	34100.	25400.
												39800.	29400.	40800.	39800.	39800.	29400.
.02	55.0	25.7	1.98	.928	53.0	24.8	961.					38500.	28600.	39500.	38500.	38500.	28600.
.03	53.2	30.4	2.77	1.58	50.4	28.8	559.					13400.	11100.	14000.	13400.	13400.	11100.
.04	51.5	33.4	3.44	2.23	48.1	31.2	371.					6320.	5500.	6720.	6350.	6320.	5500.
.05	50.0	35.1	4.03	2.83	45.9	32.3	264.					3500.	3140.	3800.	3540.	3500.	3140.
.06	48.6	36.1	4.56	3.39	44.0	32.7	197.					2150.	1960.	2380.	2190.	2150.	1960.
.08	46.0	36.9	5.39	4.32	40.6	32.6	120.					972.	909.	1130.	1010.	977.	913.
.1	43.9	36.8	6.05	5.08	37.8	31.7	79.8					525.	498.	642.	562.	531.	503.
K .106759	43.2	37.0	6.24	5.35	36.9	31.6	70.8					436.	415.	544.	473.	442.	420.
												2000.	633.	2110.	2040.	2010.	688.
.15	39.5	35.9	7.16	6.52	32.3	29.4	37.7					830.	426.	904.	866.	837.	433.
.2	36.2	33.9	7.82	7.33	28.4	26.6	21.9					395.	251.	451.	429.	403.	258.
.3	31.5	30.3	8.48	8.17	23.0	22.1	9.95					138.	104.	178.	148.	146.	112.
.4	28.2	27.5	8.73	8.39	19.5	19.1	5.63					68.2	55.8	101.	95.7	76.9	64.2
.5	25.7	25.3	8.78	8.50	17.0	16.8	3.65					40.1	34.2	69.0	65.4	48.9	42.7
.6	23.8	23.5	8.75	8.46	15.1	15.0	2.53					26.7	23.5	52.7	50.2	35.5	32.0
.8	20.9	20.7	8.55	8.20	12.4	12.5	1.43					14.1	12.8	36.2	34.8	22.6	21.0
1.	18.8	18.7	8.27	7.72	10.5	11.0	.928					9.00	8.34	28.6	27.7	17.3	16.1
1.5	15.3	15.2	7.55	7.11	7.72	8.09	.417	.690		.690	.207	4.28	4.07	20.6	20.2	12.5	11.4
2.	13.0	13.0	6.91	6.42	6.11	6.58	.236	2.17		2.17	.987	2.59	2.50	18.0	17.8	11.7	9.91
3.	10.2	10.2	5.91	5.22	4.33	4.98	.105	4.78	.00358	4.78	2.86	1.40	1.37	16.5	16.4	12.1	9.45
4.	8.56	8.56	5.20	4.40	3.37	4.16	.0588	6.80	.0147	6.81	4.48	.931	.914	16.4	16.3	12.9	9.79
5.	7.39	7.39	4.64	3.79	2.75	3.60	.0383	8.53	.0288	8.56	5.86	.492	.682	16.7	16.6	13.9	10.3
6.	6.53	6.53	4.21	3.31	2.33	3.22	.0266	9.90	.0445	9.94	6.96	.345	.538	17.0	17.0	14.7	10.8
8.	5.35	5.35	3.57	2.63	1.78	2.72	.0150	12.1	.0749	12.2	8.56	.375	.372	17.9	17.9	16.1	11.6
10.	4.55	4.55	3.11	2.19	1.44	2.36	.00968	14.2	.104	14.3	9.84	.282	.280	19.1	19.1	17.7	12.3
15.	3.37	3.37	2.39	1.59	.977	1.78	.00442	18.3	.160	18.5	11.8	.173	.172	22.0	22.0	21.1	13.6
20.	2.70	2.70	1.97	1.19	.740	1.51	.00216	21.4	.202	21.6	12.8	.124	.124	24.4	24.4	23.7	14.1
30.	1.97	1.97	1.47	.758	.498	1.21		25.5	.260	25.8	13.5	.0790	.0788	27.8	27.8	27.3	14.3
40.	1.56	1.56	1.19	.535	.376	1.02		28.4	.303	28.7	13.3	.0577	.0576	30.3	30.3	29.9	13.9
50.	1.31	1.31	1.01	.410	.301	.900		30.5	.336	30.8	13.0	.0451	.0450	32.2	32.2	31.9	13.5
60.	1.12	1.12	.873	.318	.252	.802		32.2	.360	32.6	12.8	.0370	.0370	33.8	33.8	33.5	13.2
80.	.887	.887	.698	.218	.189	.669		34.6	.398	35.0	12.3	.0270	.0270	35.9	35.9	35.7	12.5
100.	.737	.737	.585	.161	.152	.576		36.5	.428	36.9	11.7	.0211	.0211	37.7	37.7	37.5	11.9

89 ACTINIUM
(cm²/g = 0.002653 x barns/atom)

E (MeV)	$(\frac{\mu}{\rho})^{KN}_{inc,t}$	$(\frac{\mu}{\rho})^{BD}_{inc,t}$	$(\frac{\mu}{\rho})^{KN}_{inc,a}$	$(\frac{\mu}{\rho})^{BD}_{inc,a}$	$(\frac{\mu}{\rho})^{KN}_{inc,s}$	$(\frac{\mu}{\rho})^{BD}_{inc,s}$	$(\frac{\mu}{\rho})_{coh}$	$(\frac{\mu}{\rho})_{x_n}$	$(\frac{\mu}{\rho})_{x_e}$	$(\frac{\mu}{\rho})_{x,t}$	$(\frac{\mu}{\rho})_{x,a}$	$(\frac{\mu}{\rho})_{r,t}$	$(\frac{\mu}{\rho})_{r,a}$	$(\frac{\mu}{\rho})_{tot,t}$	$(\frac{\mu}{\rho})_{tot,t-coh}$	$(\frac{\mu}{\rho})_{tot,a}$	$(\frac{\mu}{\rho})_{tot,en}$
.001	.157	.00485	.000305	.0000094	.156	.00485	13.2					---	---	---	---	---	---
N_I .001269	.156	.00645	.000387	.0000159	.156	.00642	12.9					---	---	---	---	---	---
.0015	.156	.00783	.000456	.0000228	.156	.0078	12.6					4830.	4830.	4830.	4830.	4830.	4830.
.002	.156	.0108	.000605	.0000419	.155	.0107	12.0					3320.	3320.	3320.	3320.	3320.	3320.
.003	.155	.0166	.000899	.0000960	.154	.0164	10.7					1730.	1730.	1760.	1730.	1730.	1730.
N_V .003219	.155	.0177	.000963	.000110	.154	.0176	10.5					687.	687.	698.	687.	687.	687.
N_{IV} .003371	.155	.0186	.00101	.000121	.154	.0185	10.3					586.	586.	597.	586.	586.	586.
N_{III} .003918	.155	.0215	.00117	.000162	.154	.0214	9.68					1840.	1840.	1850.	1840.	1840.	1840.
.004	.155	.0219	.00119	.000169	.153	.0218	9.60					1670.	1670.	1680.	1670.	1670.	1670.
N_{II} .004658	.154	.0251	.00138	.000224	.153	.0249	8.94					1890.	1890.	1900.	1890.	1890.	1890.
.005	.154	.0268	.00148	.000257	.153	.0265	8.62					1220.	1220.	1230.	1220.	1220.	1220.
N_I .005002	.154	.0268	.00148	.000257	.153	.0265	8.62					1400.	1400.	1410.	1400.	1400.	1400.
.006	.153	.0310	.00176	.000356	.152	.0308	7.77					1340.	1340.	1350.	1340.	1340.	1340.
.008	.152	.0385	.00231	.000584	.150	.0379	6.39					931.	931.	939.	931.	931.	931.
.01	.151	.0454	.00284	.000849	.148	.0446	5.33					1110.	1110.	1120.	1110.	1110.	1110.
.015	.149	.0586	.00411	.00162	.144	.0570	3.58					910.	910.	918.	910.	910.	910.
L_{III} .015870	.148	.0605	.00430	.00176	.144	.0586	3.37					910.	910.	918.	910.	910.	910.
L_{II} .019083	.146	.0666	.00504	.00230	.141	.0642	2.71					1030.	1030.	1030.	1030.	1030.	1030.
L_I .019845	.146	.0679	.00523	.00243	.141	.0655	2.58					634.	634.	642.	634.	634.	634.
.02	.146	.0682	.00525	.00246	.141	.0658	2.55					294.	294.	300.	294.	294.	294.
.03	.141	.0807	.00735	.00419	.134	.0764	1.48					164.	164.	170.	164.	164.	164.
.04	.137	.0886	.00913	.00592	.128	.0828	.984					54.4	54.4	58.1	54.4	54.4	54.4
.05	.133	.0931	.0107	.00751	.122	.0857	.700					46.7	46.7	50.1	46.7	46.7	46.7
.06	.129	.0958	.0121	.00899	.117	.0868	.523					114.	80.4	118.	114.	114.	80.4
.08	.122	.0979	.0143	.0115	.108	.0865	.318					73.0	54.9	75.6	73.0	73.0	54.9
.1	.116	.0976	.0161	.0135	.100	.0841	.212					101.	74.0	104.	101.	101.	74.0
K .106759	.115	.0982	.0166	.0142	.0979	.0838	.188					90.5	67.4	93.1	90.5	90.5	67.4
.15	.105	.0952	.0190	.0173	.0857	.0780	.100					106.	78.0	108.	106.	106.	78.0
.2	.0960	.0899	.0207	.0194	.0753	.0706	.0581					102.	75.9	105.	102.	102.	75.9
.3	.0836	.0804	.0225	.0217	.0610	.0586	.0264					35.6	29.4	37.1	35.6	35.6	29.4
.4	.0748	.0730	.0232	.0223	.0517	.0507	.0149					16.8	14.6	17.8	16.8	16.8	14.6
.5	.0682	.0671	.0233	.0226	.0451	.0446	.00968					9.29	8.33	10.1	9.39	9.29	8.33
.6	.0631	.0623	.0232	.0224	.0401	.0398	.00671					5.70	5.20	6.31	5.81	5.70	5.20
.8	.0554	.0549	.0227	.0218	.0329	.0332	.00379					2.58	2.41	3.00	2.68	2.59	2.42
1.	.0499	.0496	.0219	.0205	.0279	.0292	.00246					1.39	1.32	1.70	1.49	1.41	1.33
1.5	.0406	.0403	.0200	.0189	.0205	.0215	.00111	.00183		.00183	.000549	1.16	1.10	1.44	1.25	1.17	1.11
2.	.0345	.0345	.0183	.0170	.0162	.0175	.000626	.00576		.00576	.00262	5.31	1.68	5.60	5.41	5.33	1.69
3.	.0271	.0271	.0157	.0138	.0115	.0132	.000279	.0127	.0000095	.0127	.00759	2.20	1.13	2.40	2.30	2.22	1.15
4.	.0227	.0227	.0138	.0117	.00894	.0110	.000156	.0180	.0000390	.0181	.0119	1.05	.666	1.20	1.14	1.07	.684
5.	.0196	.0196	.0123	.0101	.00730	.00955	.000102	.0226	.0000764	.0227	.0155	.366	.276	.472	.446	.387	.297
6.	.0173	.0173	.0112	.00878	.00618	.00854	.0000706	.0263	.000118	.0264	.0185	.181	.148	.268	.254	.204	.170
8.	.0142	.0142	.00947	.00698	.00472	.00722	.0000398	.0321	.000199	.0324	.0227	.106	.0907	.183	.174	.130	.113
10.	.0121	.0121	.00825	.00581	.00382	.00626	.0000257	.0377	.000276	.0379	.0261	.0708	.0623	.140	.133	.0942	.0849
15.	.00894	.00894	.00634	.00422	.00259	.00472	.0000117	.0485	.000424	.0491	.0313	.0374	.0340	.0960	.0923	.0600	.0557
20.	.00716	.00716	.00523	.00316	.00196	.00401	.0000057	.0568	.000536	.0573	.0340	.0239	.0221	.0759	.0735	.0459	.0427
30.	.00523	.00523	.00390	.00201	.00132	.00321		.0677	.000690	.0684	.0358	.0114	.0108	.0547	.0536	.0332	.0302
40.	.00414	.00414	.00316	.00142	.000998	.00271		.0753	.000804	.0761	.0353	.00687	.00669	.0478	.0472	.0310	.0283
50.	.00348	.00348	.00268	.00109	.000799	.00239		.0809	.000891	.0817	.0345	.00371	.00363	.0438	.0435	.0321	.0291
60.	.00297	.00297	.00232	.000844	.000669	.00213		.0854	.000955	.0865	.0340	.00247	.00242	.0435	.0432	.0342	.0260
80.	.00235	.00235	.00185	.000578	.000501	.00177		.0918	.00106	.0929	.0326	.00184	.00181	.0443	.0440	.0369	.0273
100.	.00196	.00196	.00155	.000427	.000403	.00153		.0968	.00114	.0979	.0310	.00145	.00143	.0451	.0451	.0390	.0287
												.000995	.000987	.0475	.0475	.0427	.0308
												.000748	.000743	.0507	.0507	.0470	.0326
												.000459	.000456	.0584	.0584	.0560	.0361
												.000329	.000329	.0647	.0647	.0629	.0374
												.000210	.000209	.0738	.0738	.0724	.0379
												.000153	.000153	.0804	.0804	.0793	.0369
												.000120	.000119	.0854	.0854	.0846	.0358
												.0000982	.0000982	.0897	.0897	.0889	.0350
												.0000716	.0000716	.0952	.0952	.0947	.0337
												.0000560	.0000560	.100	.100	.0995	.0316

90 THORIUM
(barns/atom)

E (MeV)	$\sigma^{KN}_{inc,t}$	$\sigma^{BD}_{inc,t}$	$\sigma^{KN}_{inc,a}$	$\sigma^{BD}_{inc,a}$	$\sigma^{KN}_{inc,s}$	$\sigma^{BD}_{inc,s}$	σ_{coh}	$\sigma_{\pi n}$	$\sigma_{\pi e}$	$\sigma_{\pi,t}$	$\sigma_{\pi,a}$	$\sigma_{\gamma,t}$	$\sigma_{\gamma,a}$	$\sigma_{tot,t}$	$\sigma_{tot,t-coh}$	$\sigma_{tot,a}$	$\sigma_{tot,en}$
.001	59.6	1.82	.116	.00355	59.5	1.82	5090.					---	---	---	---	---	---
N_I .001330	59.6	2.57	.154	.00865	59.4	2.56	4940.					---	---	---	---	---	---
												1720000.	1720000.	1720000.	1720000.	1720000.	1720000.
.0015	59.5	2.95	.174	.00861	59.3	2.94	4860.					1310000.	1310000.	1310000.	1310000.	1310000.	1310000.
.002	59.4	4.08	.230	.0158	59.2	4.06	4610.					681000.	681000.	684000.	681000.	681000.	681000.
.003	59.2	6.28	.343	.0364	58.8	6.24	4120.					269000.	269000.	273000.	269000.	269000.	269000.
N_{IV} .003332	59.1	6.98	.380	.0449	58.7	6.94	3970.					213000.	213000.	217000.	213000.	213000.	213000.
												666000.	666000.	670000.	666000.	666000.	666000.
N_{IV} .003490	59.1	7.31	.397	.0492	58.7	7.26	3900.					605000.	605000.	609000.	605000.	605000.	605000.
												686000.	686000.	690000.	686000.	686000.	686000.
.004	58.9	8.35	.454	.0643	58.5	8.29	3690.					458000.	458000.	462000.	458000.	458000.	458000.
N_{III} .004046	58.9	8.44	.459	.0657	58.5	8.37	3670.					443000.	443000.	447000.	443000.	443000.	443000.
												510000.	510000.	514000.	510000.	510000.	510000.
N_{II} .004830	58.8	9.87	.544	.0914	58.2	9.78	3370.					337000.	337000.	340000.	337000.	337000.	337000.
												401000.	401000.	404000.	401000.	401000.	401000.
.005	58.7	10.2	.562	.0977	58.2	10.1	3310.					363000.	363000.	366000.	363000.	363000.	363000.
N_I .005182	58.7	10.5	.582	.104	58.1	10.4	3250.					330000.	330000.	333000.	330000.	330000.	330000.
												371000.	371000.	374000.	371000.	371000.	371000.
.006	58.5	11.8	.670	.135	57.8	11.7	2990.					250000.	250000.	253000.	250000.	250000.	250000.
.008	58.1	14.6	.879	.221	57.2	14.4	2460.					117000.	117000.	119000.	117000.	117000.	117000.
.01	57.6	17.2	1.08	.322	56.6	16.9	2050.					64900.	64900.	67000.	64900.	64900.	64900.
.015	56.6	22.3	1.57	.617	55.0	21.7	1380.					21600.	21600.	23000.	21600.	21600.	21600.
L_{III} .016300	56.3	23.3	1.68	.695	54.7	22.6	1260.					17200.	17200.	18500.	17200.	17200.	17200.
												41800.	29400.	43100.	41800.	41800.	29400.
L_{II} .019693	55.7	25.7	1.98	.913	53.7	24.8	1010.					26500.	20000.	27500.	26500.	26500.	20000.
												36500.	26800.	37500.	36500.	36500.	26800.
.02	55.6	25.9	2.01	.935	53.6	25.0	986.					35000.	25800.	36000.	35000.	35000.	25800.
L_I .020466	55.5	26.2	2.04	.965	53.5	25.2	957.					32800.	24400.	33800.	32800.	32800.	24400.
												38300.	28300.	39300.	38300.	38300.	28300.
.03	53.8	30.7	2.80	1.60	51.0	29.1	573.					14100.	11600.	14700.	14100.	14100.	11600.
.04	52.1	33.6	3.47	2.24	48.6	31.4	381.					6620.	5740.	7030.	6650.	6620.	5740.
.05	50.5	35.4	4.08	2.86	46.5	32.5	271.					3660.	3270.	3970.	3700.	3660.	3270.
.06	49.1	36.5	4.61	3.42	44.5	33.1	202.					2250.	2050.	2490.	2290.	2250.	2050.
.08	46.5	37.2	5.45	4.36	41.1	32.8	123.					1030.	961.	1190.	1070.	1040.	965.
.1	44.3	37.2	6.12	5.13	38.2	32.1	82.0					557.	527.	676.	594.	563.	532.
K .109651	43.4	37.3	6.39	5.49	37.0	31.8	69.3					426.	405.	533.	463.	432.	410.
												1940.	615.	2050.	1980.	1950.	620.
.15	39.9	36.3	7.24	6.59	32.7	29.7	38.8					866.	434.	941.	902.	873.	441.
.2	36.6	34.3	7.91	7.42	28.7	26.9	22.5					413.	258.	470.	447.	421.	265.
.3	31.8	30.7	8.58	8.28	23.2	22.4	10.2					144.	108.	185.	175.	153.	116.
.4	28.5	27.8	8.83	8.48	19.7	19.3	5.79					71.7	58.3	105.	99.5	80.5	66.8
.5	26.0	25.6	8.88	8.58	17.1	17.0	3.75					42.2	35.9	71.5	67.8	51.1	44.5
.6	24.1	23.8	8.85	8.57	15.2	15.2	2.60					27.9	24.4	54.3	51.7	36.8	33.0
.8	21.1	21.0	8.65	8.32	12.5	12.7	1.47					14.8	13.4	37.3	35.8	23.4	21.7
1.	19.0	18.9	8.36	7.81	10.6	11.1	.952					9.40	8.70	29.3	28.3	17.8	16.5
1.5	15.4	15.4	7.64	7.19	7.80	8.21	.429	.712		.712	.214	4.50	4.28	21.0	20.6	12.9	11.7
2.	13.2	13.1	6.99	6.47	6.18	6.63	.242	2.24		2.24	1.02	2.72	2.62	18.3	18.1	11.9	10.1
3.	10.4	10.3	5.98	5.27	4.38	5.03	.108	4.90	.00362	4.90	2.93	1.46	1.42	16.8	16.7	12.3	9.62
4.	8.66	8.66	5.25	4.45	3.40	4.21	.0604	6.95	.0148	6.96	4.58	.980	.962	16.7	16.6	13.2	9.99
5.	7.48	7.48	4.70	3.83	2.78	3.65	.0394	8.70	.0292	8.73	5.97	.727	.716	17.0	16.9	14.2	10.5
6.	6.61	6.61	4.26	3.34	2.35	3.27	.0274	10.1	.0450	10.1	7.09	.572	.565	17.3	17.3	14.9	11.0
8.	5.41	5.41	3.61	2.65	1.80	2.76	.0155	12.4	.0757	12.5	8.76	.392	.388	18.3	18.3	16.5	11.8
10.	4.60	4.60	3.15	2.21	1.46	2.39	.00996	14.5	.105	14.6	10.0	.297	.295	19.5	19.5	18.0	12.5
15.	3.41	3.41	2.42	1.60	.988	1.81	.00455	18.7	.162	18.9	12.0	.181	.180	22.5	22.5	21.5	13.8
20.	2.74	2.74	1.99	1.20	.748	1.54	.00225	21.8	.204	22.0	13.0	.130	.130	24.9	24.9	24.1	14.3
30.	1.99	1.99	1.49	.762	.503	1.23		26.0	.263	26.3	13.7	.0832	.0830	28.4	28.4	27.9	14.5
40.	1.58	1.58	1.20	.540	.380	1.04		29.0	.306	29.3	13.5	.0608	.0607	30.9	30.9	30.6	14.1
50.	1.32	1.32	1.02	.412	.304	.908		31.1	.339	31.4	13.2	.0476	.0475	32.8	32.8	32.5	13.7
60.	1.14	1.14	.883	.323	.255	.817		32.9	.363	33.3	13.1	.0390	.0390	34.5	34.5	34.2	13.5
80.	.897	.897	.706	.220	.192	.677		35.3	.402	35.7	12.5	.0285	.0285	36.6	36.6	36.4	12.7
100.	.745	.745	.592	.162	.154	.583		37.0	.432	37.4	11.8	.0222	.0222	38.2	38.2	38.0	12.0

90 THORIUM

(cm^2/g = 0.002595 x barns/atom)

E (MeV)	$(\frac{\mu}{\rho})^{KN}_{inc,t}$	$(\frac{\mu}{\rho})^{BD}_{inc,t}$	$(\frac{\mu}{\rho})^{KN}_{inc,a}$	$(\frac{\mu}{\rho})^{BD}_{inc,a}$	$(\frac{\mu}{\rho})^{KN}_{inc,s}$	$(\frac{\mu}{\rho})^{BD}_{inc,s}$	$(\frac{\mu}{\rho})_{coh}$	$(\frac{\mu}{\rho})_{\kappa_n}$	$(\frac{\mu}{\rho})_{\kappa_e}$	$(\frac{\mu}{\rho})_{\kappa,t}$	$(\frac{\mu}{\rho})_{\kappa,a}$	$(\frac{\mu}{\rho})_{\tau,t}$	$(\frac{\mu}{\rho})_{\tau,a}$	$(\frac{\mu}{\rho})_{tot,t}$	$(\frac{\mu}{\rho})_{tot,t-coh}$	$(\frac{\mu}{\rho})_{tot,a}$	$(\frac{\mu}{\rho})_{tot,er}$
.001	.155	.00472	.000301	.0000092	.154	.00472	13.2					---	---	---	---	---	---
N_I .001330	.155	.00667	.000400	.0000173	.154	.00664	12.8					---	---	---	---	---	---
.0015	.154	.00766	.000452	.0000223	.154	.00763	12.6					4460.	4460.	4460.	4460.	4460.	4460.
.002	.154	.0106	.000597	.0000410	.154	.0105	12.0					3400.	3400.	3400.	3400.	3400.	3400.
.003	.154	.0163	.000890	.0000945	.153	.0162	10.7					1770.	1770.	1780.	1770.	1770.	1770.
M_V .003332	.153	.0181	.000986	.000117	.152	.0180	10.3					698.	698.	708.	698.	698.	698.
M_{IV} .003490	.153	.0190	.00103	.000128	.152	.0188	10.1					553.	553.	563.	553.	553.	553.
.004	.153	.0217	.00118	.000167	.152	.0215	9.58					1730.	1730.	1740.	1730.	1730.	1730.
M_{III} .004046	.153	.0219	.00119	.000170	.152	.0217	9.52					1570.	1570.	1580.	1570.	1570.	1570.
M_{II} .004830	.153	.0256	.00141	.000237	.151	.0254	8.75					1780.	1780.	1790.	1780.	1780.	1780.
.005	.152	.0265	.00146	.000254	.151	.0262	8.59					1190.	1190.	1200.	1190.	1190.	1190.
M_I .005182	.152	.0272	.00151	.000270	.151	.0270	8.43					1150.	1150.	1160.	1150.	1150.	1150.
.006	.152	.0306	.00174	.000350	.150	.0304	7.76					1320.	1320.	1330.	1320.	1320.	1320.
.008	.151	.0379	.00228	.000573	.148	.0374	6.38					875.	875.	882.	875.	875.	875.
.01	.149	.0446	.00280	.000836	.147	.0439	5.32					1040.	1040.	1050.	1040.	1040.	1040.
.015	.147	.0579	.00407	.00160	.143	.0563	3.58					942.	942.	950.	942.	942.	942.
L_{III} .016300	.146	.0605	.00436	.00180	.142	.0586	3.27					856.	856.	864.	856.	856.	856.
L_{II} .019693	.145	.0667	.00514	.00237	.139	.0644	2.62					963.	963.	971.	963.	963.	963.
.02	.144	.0672	.00522	.00243	.139	.0649	2.56					649.	649.	657.	649.	649.	649.
L_I .020466	.144	.0680	.00529	.00250	.139	.0654	2.48					304.	304.	309.	304.	304.	304.
.03	.140	.0797	.00727	.00415	.132	.0755	1.49					168.	168.	174.	168.	168.	168.
.04	.135	.0872	.00900	.00581	.126	.0815	.989					56.1	56.1	59.7	56.1	56.1	56.1
.05	.131	.0919	.0106	.00742	.121	.0843	.703					44.6	44.6	48.0	44.6	44.6	44.6
.06	.127	.0947	.0120	.00887	.115	.0859	.524					108.	76.3	112.	108.	108.	76.3
.08	.121	.0965	.0141	.0113	.107	.0851	.319					68.8	51.9	71.4	68.8	68.8	51.9
.1	.115	.0965	.0159	.0133	.0991	.0833	.213					94.7	69.5	97.3	94.7	94.7	69.5
K .109651	.113	.0968	.0166	.0142	.0960	.0825	.180					90.8	67.0	93.4	90.8	90.8	67.0
.15	.104	.0942	.0188	.0171	.0849	.0771	.101					85.1	63.3	87.7	85.1	85.1	63.3
.2	.0950	.0890	.0205	.0193	.0745	.0698	.0584					99.4	73.4	102.	99.4	99.4	73.4
.3	.0825	.0797	.0223	.0215	.0602	.0581	.0265					36.6	30.1	38.1	36.6	36.6	30.1
.4	.0740	.0721	.0229	.0220	.0511	.0501	.0150					17.2	14.9	18.2	17.3	17.2	14.9
.5	.0675	.0664	.0230	.0223	.0444	.0441	.00973					9.50	8.49	10.3	9.60	9.50	8.49
.6	.0625	.0618	.0230	.0222	.0394	.0394	.00675					5.84	5.32	6.46	5.94	5.84	5.32
.8	.0548	.0545	.0224	.0216	.0324	.0330	.00381					2.67	2.49	3.09	2.78	2.70	2.50
1.	.0493	.0490	.0217	.0203	.0275	.0288	.00247					1.45	1.37	1.75	1.54	1.46	1.38
1.5	.0400	.0400	.0198	.0187	.0202	.0213	.00111	.00185		.00185	.000555	1.11	1.05	1.38	1.20	1.12	1.06
2.	.0343	.0340	.0181	.0168	.0160	.0172	.000628	.00581		.00581	.00265	5.03	1.60	5.32	5.14	5.06	1.61
3.	.0270	.0267	.0155	.0137	.0114	.0131	.000280	.0127	.00000939	.0127	.00760	2.25	1.13	2.44	2.34	2.27	1.14
4.	.0225	.0225	.0136	.0115	.00882	.0109	.000157	.0180	.0000384	.0181	.0119	1.07	.670	1.22	1.16	1.09	.688
5.	.0194	.0194	.0122	.00994	.00721	.00947	.000102	.0226	.0000758	.0227	.0155	.374	.280	.480	.454	.397	.301
6.	.0172	.0172	.0111	.00867	.00610	.00849	.0000711	.0262	.000117	.0262	.0184	.186	.151	.272	.258	.209	.173
8.	.0140	.0140	.00937	.00688	.00467	.00716	.0000402	.0322	.000196	.0324	.0227	.110	.0932	.186	.176	.133	.115
10.	.0119	.0119	.00817	.00573	.00379	.00620	.0000258	.0376	.000272	.0379	.0259	.0724	.0633	.141	.134	.0955	.0856
15.	.00885	.00885	.00628	.00415	.00256	.00470	.0000118	.0485	.000420	.0490	.0311	.0384	.0348	.0968	.0929	.0607	.0563
20.	.00711	.00711	.00516	.00311	.00194	.00400	.0000058	.0566	.000529	.0571	.0337	.0244	.0226	.0760	.0734	.0462	.0428
30.	.00516	.00516	.00387	.00198	.00131	.00319		.0675	.000682	.0682	.0356	.0117	.0111	.0545	.0535	.0335	.0304
40.	.00410	.00410	.00311	.00140	.000986	.00270		.0753	.000796	.0760	.0350	.00706	.00680	.0475	.0470	.0309	.0262
50.	.00343	.00343	.00265	.00107	.000789	.00236		.0807	.000880	.0815	.0343	.00379	.00368	.0436	.0433	.0319	.0250
60.	.00296	.00296	.00229	.000838	.000662	.00212		.0854	.000942	.0864	.0340	.00254	.00250	.0433	.0431	.0343	.0259
80.	.00233	.00233	.00183	.000571	.000498	.00176		.0916	.00104	.0926	.0324	.00189	.00186	.0441	.0439	.0368	.0272
100.	.00193	.00193	.00154	.000420	.000400	.00151		.0960	.00112	.0971	.0306	.00148	.00147	.0449	.0449	.0387	.0285
												.00102	.00101	.0475	.0475	.0428	.0306
												.000771	.000766	.0506	.0506	.0467	.0324
												.000470	.000467	.0584	.0584	.0558	.0358
												.000337	.000337	.0646	.0646	.0625	.0371
												.000216	.000215	.0737	.0737	.0724	.0376
												.000158	.000158	.0802	.0802	.0794	.0366
												.000124	.000123	.0851	.0851	.0843	.0356
												.000101	.000101	.0895	.0895	.0887	.0350
												.0000740	.0000740	.0950	.0950	.0945	.0330
												.0000576	.0000576	.0991	.0991	.0986	.0311

91 PROTACTINIUM
(barns/atom)

E (MeV)	KN $\sigma_{inc,t}$	BD $\sigma_{inc,t}$	KN $\sigma_{inc,a}$	BD $\sigma_{inc,a}$	KN $\sigma_{inc,s}$	BD $\sigma_{inc,s}$	σ_{coh}	$\sigma_{\gamma n}$	$\sigma_{\gamma e}$	$\sigma_{\gamma,t}$	$\sigma_{\gamma,a}$	$\sigma_{\gamma,t}$	$\sigma_{\gamma,a}$	$\sigma_{tot,t}$	$\sigma_{tot,t-coh}$	$\sigma_{tot,a}$	$\sigma_{tot,en}$
.001	60.3	1.80	.117	.00351	60.2	1.80	5220.					---	---	---	---	---	---
M_I .001385	60.2	2.68	.162	.00722	60.0	2.67	5040.					---	---	---	---	---	---
.0015	60.2	2.95	.176	.00861	60.0	2.94	4990.					1630000.	1630000.	1640000.	1630000.	1630000.	1630000.
.002	60.1	4.07	.233	.0158	59.8	4.05	4740.					1360000.	1360000.	1360000.	1360000.	1360000.	1360000.
.003	59.8	6.28	.347	.0364	59.5	6.24	4250.					709000.	709000.	714000.	709000.	709000.	709000.
M_V .003442	59.7	7.21	.396	.0479	59.3	7.16	4040.					281000.	281000.	285000.	281000.	281000.	281000.
M_{IV} .003609	59.7	7.56	.415	.0526	59.3	7.51	3970.					205000.	205000.	209000.	205000.	205000.	205000.
.004	59.6	8.35	.459	.0643	59.1	8.29	3800.					642000.	642000.	646000.	642000.	642000.	642000.
M_{III} .004174	59.6	8.68	.478	.0696	59.1	8.61	3730.					582000.	582000.	586000.	582000.	582000.	582000.
.005	59.4	10.2	.569	.0977	58.8	10.1	3410.					660000.	660000.	664000.	660000.	660000.	660000.
M_{II} .005003	59.4	10.2	.569	.0978	58.8	10.1	3410.					484000.	484000.	488000.	484000.	484000.	484000.
M_I .005364	59.3	10.8	.608	.111	58.7	10.7	3280.					428000.	428000.	432000.	428000.	428000.	428000.
.006	59.1	11.8	.677	.135	58.5	11.7	3070.					493000.	493000.	497000.	493000.	493000.	493000.
.008	58.7	14.7	.889	.223	57.8	14.5	2520.					323000.	323000.	326000.	323000.	323000.	323000.
.01	58.3	17.3	1.09	.324	57.2	17.0	2100.					323000.	323000.	326000.	323000.	323000.	323000.
.015	57.2	22.4	1.58	.620	55.7	21.8	1420.					384000.	384000.	387000.	384000.	384000.	384000.
L_{III} .016733	56.9	23.8	1.74	.727	55.1	23.1	1260.					317000.	317000.	320000.	317000.	317000.	317000.
.02	56.2	26.1	2.03	.942	54.2	25.2	1010.					355000.	355000.	358000.	355000.	355000.	355000.
L_{II} .020314	56.2	26.3	2.05	.962	54.1	25.3	994.					263000.	263000.	266000.	263000.	263000.	263000.
L_I .021105	56.	26.8	2.12	1.02	53.9	25.8	966.					122000.	122000.	125000.	122000.	122000.	122000.
.03	54.4	30.9	2.83	1.61	51.6	29.3	589.					68000.	68000.	70100.	68000.	68000.	68000.
.04	52.7	33.9	3.51	2.26	49.1	31.6	391.					22600.	22600.	24000.	22600.	22600.	22600.
.05	51.1	35.7	4.12	2.88	47.0	32.8	279.					16800.	16800.	18100.	16800.	16800.	16800.
.06	49.6	36.8	4.66	3.45	45.0	33.3	208.					40500.	28500.	41800.	40500.	40500.	28500.
.08	47.1	37.6	5.51	4.40	41.6	33.2	127.					26400.	19800.	27400.	26400.	26400.	19800.
.1	44.8	37.6	6.19	5.19	38.7	32.4	84.4					25400.	19200.	26400.	25400.	25400.	19200.
K .112601	43.6	37.7	6.54	5.66	37.0	32.0	68.0					35100.	25800.	36100.	35100.	35100.	25800.
.15	40.4	36.6	7.33	6.64	33.0	30.0	39.9					31600.	23500.	32600.	31600.	31600.	23500.
.2	37.0	34.6	8.00	7.48	29.0	27.1	23.1					36800.	27300.	37800.	36800.	36800.	27300.
.3	32.2	31.0	8.67	8.36	23.5	22.6	10.5					14700.	12000.	15300.	14700.	14700.	12000.
.4	28.8	28.1	8.93	8.57	19.9	19.5	5.96					6910.	5960.	7330.	6940.	6910.	5960.
.5	26.3	25.9	8.97	8.68	17.3	17.2	3.86					3840.	3420.	4150.	3880.	3840.	3420.
.6	24.3	24.0	8.94	8.64	15.4	15.4	2.68					2360.	2140.	2600.	2400.	2360.	2140.
.8	21.4	21.2	8.74	8.40	12.6	12.8	1.51					1090.	1020.	1250.	1130.	1100.	1020.
1.	19.2	19.1	8.45	7.89	10.8	11.2	.981					587.	555.	709.	625.	593.	560.
1.5	15.6	15.6	7.72	7.29	7.89	8.31	.440	.740		.740	.222	416.	398.	522.	454.	423.	402.
2.	13.3	13.3	7.07	6.56	6.25	6.74	.249	2.30		2.30	1.04	1880.	597.	1990.	1920.	1890.	603.
3.	10.5	10.5	6.04	5.37	4.43	5.13	.111	5.01	.00366	5.01	2.99	900.	439.	976.	937.	907.	446.
4.	8.75	8.75	5.31	4.49	3.44	4.26	.0622	7.10	.0150	7.11	4.67	430.	265.	488.	465.	438.	272.
5.	7.56	7.56	4.75	3.86	2.81	3.70	.0405	8.90	.0295	8.93	6.11	150.	112.	192.	181.	159.	120.
6.	6.68	6.68	4.30	3.37	2.38	3.31	.0282	10.3	.0455	10.3	7.22	74.6	60.3	109.	103.	83.5	68.9
8.	5.47	5.47	3.65	2.67	1.82	2.80	.0159	12.6	.0764	12.7	8.89	44.0	37.2	73.8	69.9	53.0	45.9
10.	4.65	4.65	3.18	2.23	1.47	2.42	.0102	14.8	.106	14.9	10.2	29.1	25.4	55.8	53.1	38.0	34.0
15.	3.45	3.45	2.45	1.62	.999	1.83	.00469	19.0	.163	19.2	12.2	15.5	14.0	38.2	36.7	24.2	22.4
20.	2.77	2.77	2.01	1.21	.756	1.56	.00233	22.3	.206	22.5	13.2	9.45	9.09	29.9	28.9	18.3	17.0
30.	2.01	2.01	1.50	.768	.509	1.24		26.5	.265	26.8	13.9	4.68	4.44	21.5	21.0	13.1	12.0
40.	1.60	1.60	1.22	.546	.384	1.05		29.5	.309	29.8	13.7	2.84	2.73	18.7	18.4	12.2	10.3
50.	1.34	1.34	1.03	.417	.308	.923		31.6	.342	31.9	13.4	1.54	1.50	17.2	17.0	12.6	9.86
60.	1.15	1.15	.893	.324	.257	.826		33.5	.367	33.9	13.2	1.03	1.01	17.0	16.9	13.4	10.2
80.	.907	.907	.714	.221	.194	.686		36.0	.406	36.4	12.7	.762	.750	17.3	17.3	14.4	10.7
100.	.753	.753	.598	.164	.155	.589		37.8	.436	38.2	12.0	.599	.591	17.6	17.6	15.2	11.2
												.411	.407	18.6	18.6	16.8	12.0
												.310	.308	19.9	19.9	18.4	12.7
												.190	.189	22.8	22.8	21.8	14.0
												.137	.136	25.4	25.4	24.6	14.5
												.0875	.0873	28.9	28.9	28.4	14.8
												.0639	.0638	31.5	31.5	31.1	14.3
												.0499	.0498	33.3	33.3	33.0	13.9
												.0410	.0409	35.1	35.1	34.8	13.6
												.0299	.0299	37.3	37.3	37.1	13.0
												.0232	.0232	39.0	39.0	38.8	12.2

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(cm²/g = 0.002607 x barns/atom)

E (MeV)	$(\frac{\mu}{\rho})^{KN}_{inc,t}$	$(\frac{\mu}{\rho})^{BD}_{inc,t}$	$(\frac{\mu}{\rho})^{KN}_{inc,a}$	$(\frac{\mu}{\rho})^{BD}_{inc,a}$	$(\frac{\mu}{\rho})^{KN}_{inc,s}$	$(\frac{\mu}{\rho})^{BD}_{inc,s}$	$(\frac{\mu}{\rho})_{coh}$	$(\frac{\mu}{\rho})_{\kappa n}$	$(\frac{\mu}{\rho})_{\kappa e}$	$(\frac{\mu}{\rho})_{\kappa,t}$	$(\frac{\mu}{\rho})_{\kappa,a}$	$(\frac{\mu}{\rho})_{\tau,t}$	$(\frac{\mu}{\rho})_{\tau,a}$	$(\frac{\mu}{\rho})_{tot,t}$	$(\frac{\mu}{\rho})_{tot,t-coh}$	$(\frac{\mu}{\rho})_{tot,a}$	$(\frac{\mu}{\rho})_{tot,en}$
.001	.157	.00469	.000305	.0000092	.157	.00469	13.6					---	---	---	---	---	---
N_I .001385	.157	.00699	.000422	.0000188	.156	.00696	13.1					---	---	---	---	---	---
.0015	.157	.00769	.000459	.0000224	.156	.00766	13.0					4250.	4250.	4280.	4250.	4250.	4250.
.002	.157	.0106	.000607	.0000412	.156	.0106	12.4					3550.	3550.	3550.	3550.	3550.	3550.
.003	.156	.0164	.000905	.0000949	.155	.0163	11.1					1850.	1850.	1860.	1850.	1850.	1850.
M_V .003442	.156	.0188	.00103	.000125	.155	.0187	10.5					733.	733.	743.	733.	733.	733.
M_{IV} .003609	.156	.0197	.00108	.000137	.155	.0196	10.3					534.	534.	545.	534.	534.	534.
.004	.155	.0218	.00120	.000168	.154	.0216	9.91					1670.	1670.	1680.	1670.	1670.	1670.
M_{III} .004174	.155	.0226	.00125	.000181	.154	.0224	9.72					1520.	1520.	1530.	1520.	1520.	1520.
.005	.155	.0266	.00148	.000255	.153	.0263	8.89					1720.	1720.	1730.	1720.	1720.	1720.
M_{II} .005003	.155	.0266	.00148	.000255	.153	.0263	8.89					1260.	1260.	1270.	1260.	1260.	1260.
M_I .005364	.155	.0282	.00159	.000289	.153	.0279	8.55					1120.	1120.	1130.	1120.	1120.	1120.
.006	.154	.0308	.00176	.000352	.153	.0305	8.00					1290.	1290.	1300.	1290.	1290.	1290.
.008	.153	.0383	.00232	.000581	.151	.0378	6.57					842.	842.	850.	842.	842.	842.
.01	.152	.0451	.00284	.000845	.149	.0443	5.47					842.	842.	850.	842.	842.	842.
.015	.149	.0584	.00412	.00162	.145	.0568	3.70					1000.	1000.	1010.	1000.	1000.	1000.
L_{III} .016733	.148	.0620	.00454	.00190	.144	.0602	3.28					826.	826.	834.	826.	826.	826.
.02	.147	.0680	.00529	.00246	.141	.0657	2.63					925.	925.	933.	925.	925.	925.
L_{II} .020314	.147	.0686	.00534	.00251	.141	.0660	2.59					686.	686.	693.	686.	686.	686.
L_I .021105	.146	.0699	.00553	.00266	.141	.0673	2.47					318.	318.	326.	318.	318.	318.
.03	.142	.0806	.00738	.00420	.135	.0764	1.54					177.	177.	183.	177.	177.	177.
.04	.137	.0884	.00915	.00589	.128	.0824	1.02					58.9	58.9	62.6	58.9	58.9	58.9
.05	.133	.0931	.0107	.00751	.123	.0855	.727					43.8	43.8	47.2	43.8	43.8	43.8
.06	.129	.0959	.0121	.00899	.117	.0868	.542					106.	74.3	109.	106.	106.	74.3
.08	.123	.0980	.0144	.0115	.108	.0866	.331					68.8	51.6	71.4	68.8	68.8	51.6
.1	.117	.0980	.0161	.0135	.101	.0845	.220					66.2	50.1	68.8	66.2	66.2	50.1
K .112601	.114	.0983	.0170	.0148	.0965	.0834	.177					91.5	67.3	94.1	91.5	91.5	67.3
.15	.105	.0954	.0191	.0173	.0860	.0792	.104					82.4	61.3	85.0	82.4	82.4	61.3
.2	.0965	.0902	.0209	.0195	.0756	.0706	.0602					95.9	71.2	98.5	95.9	95.9	71.2
.3	.0839	.0808	.0226	.0218	.0613	.0589	.0274					38.3	31.3	39.9	38.3	38.3	31.3
.4	.0751	.0733	.0233	.0223	.0519	.0508	.0155					18.0	15.5	19.1	18.1	18.0	15.5
.5	.0686	.0675	.0234	.0226	.0451	.0448	.0101					10.0	8.92	10.8	10.1	10.0	8.92
.6	.0634	.0626	.0233	.0225	.0401	.0401	.00699					6.15	5.58	6.78	6.26	6.15	5.58
.8	.0558	.0553	.0228	.0219	.0328	.0334	.00394					2.84	2.66	3.26	2.95	2.87	2.66
1.	.0501	.0498	.0220	.0206	.0282	.0292	.00256					1.53	1.45	1.85	1.63	1.55	1.46
1.5	.0407	.0407	.0201	.0190	.0206	.0217	.00115	.00193		.00193	.000579	1.08	1.03	1.36	1.18	1.10	1.05
2.	.0347	.0347	.0184	.0171	.0163	.0176	.000649	.00600		.00600	.00271	4.90	1.56	5.19	5.01	4.93	1.57
3.	.0274	.0274	.0157	.0140	.0115	.0134	.000289	.0131	.00000954	.0131	.00779	2.35	1.14	2.54	2.44	2.36	1.16
4.	.0228	.0228	.0138	.0117	.00897	.0111	.000162	.0185	.0000391	.0185	.0122	1.12	.691	1.27	1.21	1.14	.709
5.	.0197	.0197	.0124	.0101	.00733	.00965	.000106	.0232	.0000769	.0233	.0159	.391	.292	.501	.472	.415	.313
6.	.0174	.0174	.0112	.00879	.00620	.00863	.0000735	.0269	.000119	.0269	.0188	.194	.157	.284	.269	.218	.180
8.	.0143	.0143	.00952	.00696	.00474	.00730	.0000415	.0328	.000199	.0331	.0232	.115	.0970	.192	.182	.138	.120
10.	.0121	.0121	.00829	.00581	.00383	.00631	.0000266	.0386	.000276	.0388	.0266	.0759	.0662	.145	.138	.0991	.0886
15.	.00899	.00899	.00639	.00422	.00260	.00477	.0000122	.0495	.000425	.0501	.0318	.0404	.0365	.0998	.0957	.0631	.0584
20.	.00722	.00722	.00524	.00315	.00197	.00407	.0000061	.0581	.000537	.0587	.0344	.0257	.0237	.0779	.0753	.0477	.0443
30.	.00524	.00524	.00391	.00200	.00133	.00323		.0691	.000691	.0699	.0362	.0122	.0116	.0561	.0547	.0342	.0313
40.	.00417	.00417	.00318	.00142	.00100	.00274		.0769	.000806	.0777	.0357	.00740	.00712	.0488	.0480	.0318	.0289
50.	.00349	.00349	.00269	.00109	.000803	.00241		.0824	.000892	.0832	.0349	.00601	.00591	.0448	.0443	.0328	.0257
60.	.00300	.00300	.00233	.000845	.000670	.00215		.0873	.000957	.0884	.0344	.00269	.00263	.0443	.0441	.0349	.0266
80.	.00236	.00236	.00186	.000576	.000506	.00179		.0939	.00106	.0949	.0331	.00199	.00196	.0451	.0451	.0375	.0279
100.	.00196	.00196	.00156	.000428	.000404	.00154		.0985	.00114	.0996	.0313	.00156	.00154	.0459	.0459	.0396	.0292
												.00107	.00106	.0485	.0485	.0438	.0313
												.000808	.000803	.0519	.0519	.0480	.0331
												.000495	.000493	.0594	.0594	.0568	.0365
												.000357	.000355	.0662	.0662	.0641	.0378
												.000228	.000228	.0753	.0753	.0740	.0386
												.000167	.000166	.0821	.0821	.0811	.0373
												.000130	.000130	.0868	.0868	.0860	.0362
												.000107	.000107	.0915	.0915	.0907	.0355
												.0000779	.0000779	.0972	.0972	.0967	.0339
												.0000605	.0000605	.102	.102	.101	.0318

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(barns/atom)

E (MeV)	KN $\sigma_{inc,t}$	BD $\sigma_{inc,t}$	KN $\sigma_{inc,a}$	BD $\sigma_{inc,a}$	KN $\sigma_{inc,s}$	BD $\sigma_{inc,s}$	σ_{coh}	$\sigma_{\gamma n}$	$\sigma_{\gamma e}$	$\sigma_{\gamma,t}$	$\sigma_{\gamma,a}$	$\sigma_{\gamma,t}$	$\sigma_{\gamma,a}$	$\sigma_{tot,t}$	$\sigma_{tot,t-coh}$	$\sigma_{tot,a}$	$\sigma_{tot,en}$
.001	61.0	1.79	.119	.00349	60.8	1.79	5340.					---	---	---	---	---	---
N_I .001441	60.9	2.80	.171	.00785	60.7	2.79	5140.					---	---	---	---	---	---
												1550000.	1550000.	1560000.	1550000.	1560000.	1550000.
.0015	60.8	2.94	.177	.00858	60.7	2.93	5110.					1410000.	1410000.	1420000.	1410000.	1410000.	1410000.
.002	60.7	4.07	.236	.0158	60.5	4.05	4860.					737000.	737000.	742000.	737000.	737000.	737000.
.003	60.5	6.28	.351	.0364	60.1	6.24	4350.					291000.	291000.	295000.	291000.	291000.	291000.
M_V .003552	60.4	7.43	.413	.0509	59.9	7.38	4090.					198000.	198000.	202000.	198000.	198000.	198000.
												620000.	620000.	624000.	620000.	620000.	620000.
M_{IV} .003728	60.3	7.80	.433	.0560	59.9	7.74	4010.					562000.	562000.	566000.	562000.	562000.	562000.
												636000.	636000.	640000.	636000.	636000.	636000.
.004	60.3	8.34	.466	.0642	59.8	8.28	3890.					513000.	513000.	517000.	513000.	513000.	513000.
M_{III} .004304	60.2	8.92	.498	.0738	59.7	8.85	3760.					414000.	414000.	418000.	414000.	414000.	414000.
												477000.	477000.	481000.	477000.	477000.	477000.
.005	60.0	10.2	.575	.0977	59.5	10.1	3490.					335000.	335000.	339000.	335000.	335000.	335000.
M_{II} .005181	60.0	10.5	.595	.104	59.4	10.4	3420.					310000.	310000.	313000.	310000.	310000.	310000.
												369000.	369000.	372000.	369000.	369000.	369000.
M_I .005548	59.9	11.1	.635	.118	59.3	11.0	3290.					305000.	305000.	308000.	305000.	305000.	305000.
												341000.	341000.	344000.	341000.	341000.	341000.
.006	59.8	11.8	.684	.135	59.1	11.7	3140.					277000.	277000.	280000.	277000.	277000.	277000.
.008	59.3	14.8	.898	.224	58.5	14.6	2580.					128000.	128000.	131000.	128000.	128000.	128000.
.01	58.9	17.4	1.10	.326	57.8	17.1	2150.					71300.	71300.	73500.	71300.	71300.	71300.
.015	57.9	22.6	1.60	.625	56.3	22.0	1450.					23700.	23700.	25200.	23700.	23700.	23700.
L_{III} .017170	57.4	24.3	1.80	.761	55.6	23.5	1250.					16500.	16500.	17800.	16500.	16500.	16500.
												39400.	27800.	40700.	39400.	39400.	27800.
.02	56.8	26.3	2.05	.949	54.8	25.4	1040.					27200.	20300.	28300.	27200.	27200.	20300.
L_{II} .020948	56.7	26.9	2.13	1.01	54.5	25.9	981.					24400.	18500.	25400.	24400.	24400.	18500.
												33700.	24800.	34700.	33700.	33700.	24800.
L_I .021759	56.5	27.3	2.20	1.06	54.3	26.2	934.					30300.	22600.	31300.	30300.	30300.	22600.
												35400.	26300.	36400.	35400.	35400.	26300.
.03	55.0	31.2	2.86	1.62	52.1	29.6	605.					15400.	12500.	16000.	15400.	15400.	12500.
.04	53.2	34.2	3.55	2.28	49.7	31.9	402.					7220.	6210.	7660.	7250.	7220.	6210.
.05	51.6	36.0	4.17	2.90	47.5	33.1	286.					4010.	3560.	4330.	4050.	4010.	3560.
.06	50.2	37.1	4.71	3.48	45.5	33.6	214.					2460.	2230.	2710.	2500.	2460.	2230.
.08	47.6	37.9	5.57	4.44	42.0	33.5	130.					1130.	1050.	1300.	1170.	1140.	1050.
.1	45.3	37.9	6.26	5.23	39.1	32.7	86.7					617.	582.	742.	655.	623.	587.
K .115606	43.8	38.0	6.69	5.81	37.1	32.2	66.6					406.	386.	511.	444.	413.	392.
												1820.	578.	1920.	1860.	1830.	584.
.15	40.8	37.0	7.41	6.72	33.4	30.3	41.0					937.	444.	1020.	974.	944.	451.
.2	37.4	35.0	8.08	7.57	29.3	27.4	23.8					446.	270.	505.	481.	454.	278.
.3	32.5	31.3	8.77	8.44	23.8	22.9	10.8					156.	115.	198.	187.	165.	123.
.4	29.1	28.4	9.03	8.66	20.1	19.7	6.13					78.1	62.7	113.	106.	87.1	71.4
.5	26.6	26.1	9.07	8.74	17.5	17.4	3.97					46.2	38.9	76.3	72.3	55.3	47.6
.6	24.6	24.3	9.04	8.72	15.6	15.6	2.75					30.3	26.3	57.3	54.6	39.3	35.0
.8	21.6	21.4	8.84	8.45	12.8	12.9	1.55					16.2	14.6	39.1	37.6	25.0	23.0
1.	19.4	19.3	8.55	7.95	10.9	11.3	1.00					10.3	9.49	30.6	29.6	18.9	17.4
1.5	15.8	15.7	7.81	7.33	7.98	8.37	.452	.760		.760	.228	4.91	4.65	21.8	21.4	13.5	12.2
2.	13.5	13.4	7.14	6.61	6.32	6.79	.256	2.37		2.37	1.08	2.99	2.87	19.0	18.8	12.5	10.6
3.	10.6	10.6	6.11	5.42	4.48	5.18	.114	5.13	.00370	5.13	3.06	1.61	1.57	17.5	17.3	12.8	10.0
4.	8.85	8.85	5.37	4.53	3.48	4.32	.0640	7.29	.0151	7.31	4.79	1.08	1.06	17.3	17.2	13.8	10.4
5.	7.64	7.64	4.80	3.90	2.84	3.74	.0417	9.05	.0298	9.08	6.21	.798	.785	17.6	17.5	14.7	10.9
6.	6.75	6.75	4.35	3.39	2.40	3.36	.0289	10.5	.0460	10.5	7.35	.628	.620	17.9	17.9	15.5	11.4
8.	5.53	5.53	3.69	2.70	1.84	2.83	.0163	12.8	.0772	12.9	9.01	.431	.427	18.9	18.9	17.0	12.1
10.	4.71	4.71	3.22	2.25	1.49	2.46	.0105	15.1	.107	15.2	10.4	.327	.324	20.2	20.2	18.7	13.0
15.	3.48	3.48	2.47	1.63	1.01	1.85	.00482	19.4	.165	19.6	12.4	.198	.197	23.3	23.3	22.3	14.2
20.	2.80	2.80	2.03	1.22	.768	1.58	.00242	22.6	.208	22.8	13.4	.143	.142	25.7	25.7	25.0	14.8
30.	2.04	2.04	1.52	.777	.514	1.26		27.0	.268	27.3	14.2	.0914	.0912	29.4	29.4	28.9	15.1
40.	1.62	1.62	1.23	.552	.388	1.07		30.0	.312	30.3	13.8	.0670	.0669	32.0	32.0	31.6	14.4
50.	1.35	1.35	1.04	.418	.311	.931		32.2	.346	32.5	13.6	.0523	.0522	33.9	33.9	33.6	14.1
60.	1.16	1.16	.903	.326	.260	.834		34.1	.370	34.5	13.3	.0428	.0427	35.7	35.7	35.4	13.7
80.	.917	.917	.721	.224	.196	.693		36.6	.410	37.0	12.8	.0313	.0313	37.9	37.9	37.8	13.1
100.	.762	.762	.605	.165	.157	.597		38.5	.440	38.9	12.1	.0244	.0244	39.7	39.7	39.5	12.3

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(cm^2/g = 0.002530 x barns/atom)

E (MeV)	$(\frac{\mu}{\rho})^{KN}_{inc,t}$	$(\frac{\mu}{\rho})^{BD}_{inc,t}$	$(\frac{\mu}{\rho})^{KN}_{inc,a}$	$(\frac{\mu}{\rho})^{BD}_{inc,a}$	$(\frac{\mu}{\rho})^{KN}_{inc,s}$	$(\frac{\mu}{\rho})^{BD}_{inc,s}$	$(\frac{\mu}{\rho})_{coh}$	$(\frac{\mu}{\rho})_{\pi n}$	$(\frac{\mu}{\rho})_{\pi e}$	$(\frac{\mu}{\rho})_{\pi,t}$	$(\frac{\mu}{\rho})_{\pi,a}$	$(\frac{\mu}{\rho})_{\tau,t}$	$(\frac{\mu}{\rho})_{\tau,a}$	$(\frac{\mu}{\rho})_{tot,t}$	$(\frac{\mu}{\rho})_{tot,t-nuc}$	$(\frac{\mu}{\rho})_{tot,a}$	$(\frac{\mu}{\rho})_{tot,en}$
.001	.154	.00453	.000301	.0000088	.154	.00453	13.5					---	---	---	---	---	---
M_I .00144)	.154	.00708	.000433	.0000199	.154	.00706	13.0					---	---	---	---	---	---
												3920.	3920.	3950.	3920.	3920.	3920.
.0015	.154	.00744	.000448	.0000217	.154	.00741	12.9					3570.	3570.	3590.	3570.	3570.	3570.
.002	.154	.0103	.000597	.0000400	.153	.0102	12.3					1860.	1860.	1880.	1860.	1860.	1860.
.003	.153	.0159	.000888	.0000921	.152	.0158	11.0					736.	736.	746.	736.	736.	736.
M_V .003552	.153	.0188	.00104	.000129	.152	.0187	10.3					501.	501.	511.	501.	501.	501.
												1570.	1570.	1580.	1570.	1570.	1570.
M_{IV} .003728	.153	.0197	.00110	.000142	.152	.0196	10.1					1420.	1420.	1430.	1420.	1420.	1420.
												1610.	1610.	1620.	1610.	1610.	1610.
.004	.153	.0211	.00117	.000162	.151	.0209	9.84					1300.	1300.	1310.	1300.	1300.	1300.
M_{III} .004304	.152	.0226	.00126	.000187	.151	.0224	9.51					1050.	1050.	1040.	1050.	1050.	1050.
												1210.	1210.	1220.	1210.	1210.	1210.
.005	.152	.0258	.00145	.000247	.151	.0256	8.83					848.	848.	858.	848.	848.	848.
M_{II} .005181	.152	.0266	.00151	.000263	.150	.0263	8.65					784.	784.	792.	784.	784.	784.
												934.	934.	941.	934.	934.	934.
M_I .005548	.152	.0281	.00161	.000299	.150	.0278	8.32					772.	772.	779.	772.	772.	772.
												863.	863.	870.	863.	863.	863.
.006	.151	.0299	.00173	.000342	.150	.0296	7.94					701.	701.	708.	701.	701.	701.
.008	.150	.0374	.00227	.000567	.148	.0369	6.53					324.	324.	331.	324.	324.	324.
.01	.149	.0440	.00278	.000825	.146	.0433	5.44					180.	180.	186.	180.	180.	180.
.015	.146	.0572	.00405	.00158	.142	.0557	3.67					60.0	60.0	63.8	60.0	60.0	60.0
L_{III} .017170	.145	.0615	.00455	.00193	.141	.0595	3.16					41.7	41.7	45.0	41.7	41.7	41.7
												99.7	70.3	103.	99.7	99.7	70.3
.02	.144	.0665	.00519	.00240	.139	.0643	2.63					68.8	51.4	71.6	68.8	68.8	51.4
L_{II} .020948	.143	.0681	.00539	.00256	.138	.0655	2.48					61.7	46.8	64.3	61.7	61.7	46.8
												85.3	62.7	87.8	85.3	85.3	62.7
L_I .021759	.143	.0691	.00557	.00268	.137	.0663	2.36					74.7	57.2	79.2	76.7	76.7	57.2
												89.6	66.5	92.1	89.6	89.6	66.5
.03	.139	.0789	.00724	.00410	.132	.0749	1.53					39.0	31.6	40.5	39.0	39.0	31.6
.04	.135	.0865	.00898	.00577	.126	.0807	1.02					18.3	15.7	19.4	18.3	18.3	15.7
.05	.131	.0911	.0106	.00734	.120	.0837	.724					10.1	9.01	11.0	10.2	10.1	9.01
.06	.127	.0939	.0119	.00880	.115	.0850	.541					6.22	5.64	6.86	6.32	6.22	5.64
.08	.120	.0959	.0141	.0112	.106	.0848	.329					2.86	2.66	3.29	2.96	2.88	2.66
.1	.115	.0959	.0158	.0132	.0989	.0827	.219					1.56	1.47	1.88	1.66	1.58	1.49
K .115606	.111	.0961	.0169	.0147	.0939	.0815	.188					1.03	.977	1.29	1.12	1.04	.992
												4.60	1.46	4.86	4.71	4.63	1.48
.15	.103	.0936	.0187	.0170	.0845	.0767	.104					2.37	1.12	2.58	2.46	2.39	1.14
.2	.0946	.0886	.0204	.0192	.0741	.0693	.0602					1.13	.683	1.28	1.22	1.15	.703
.3	.0822	.0792	.0222	.0214	.0602	.0579	.0273					.395	.291	.501	.473	.417	.311
.4	.0736	.0719	.0228	.0219	.0509	.0498	.0155					.198	.159	.288	.268	.220	.181
.5	.0673	.0660	.0229	.0221	.0443	.0440	.0100					.117	.0984	.193	.183	.140	.120
.6	.0622	.0615	.0229	.0221	.0395	.0395	.00696					.0767	.0665	.145	.138	.0996	.0886
.8	.0546	.0541	.0224	.0214	.0324	.0326	.00392					.0410	.0369	.0989	.0951	.0633	.0582
1.	.0491	.0488	.0216	.0201	.0276	.0286	.00253					.0261	.0240	.0774	.0749	.0478	.0440
1.5	.0400	.0397	.0198	.0185	.0202	.0212	.00114	.00192		.00192	.000577	.0124	.0118	.0552	.0541	.0342	.0309
2.	.0342	.0339	.0181	.0167	.0160	.0172	.000648	.00600		.00600	.00273	.00756	.00726	.0481	.0476	.0316	.0288
3.	.0268	.0268	.0155	.0137	.0113	.0131	.000288	.0130	.00000936	.0130	.00774	.00407	.00397	.0443	.0438	.0324	.0253
4.	.0224	.0224	.0136	.0115	.00880	.0109	.000162	.0184	.0000382	.0185	.0121	.00273	.00268	.0438	.0435	.0349	.0263
5.	.0193	.0193	.0121	.00987	.00719	.00946	.000106	.0229	.0000754	.0230	.0157	.00202	.00199	.0445	.0443	.0372	.0278
6.	.0171	.0171	.0110	.00858	.00607	.00850	.0000731	.0266	.000116	.0266	.0186	.00159	.00157	.0453	.0453	.0392	.0288
8.	.0140	.0140	.00934	.00683	.00466	.00716	.0000412	.0324	.000195	.0326	.0228	.00109	.00108	.0478	.0478	.0430	.0306
10.	.0119	.0119	.00815	.00569	.00377	.00622	.0000266	.0382	.000271	.0385	.0263	.000827	.000820	.0511	.0511	.0473	.0329
15.	.00880	.00880	.00625	.00412	.00256	.00468	.0000122	.0491	.000417	.0496	.0314	.000501	.000498	.0589	.0589	.0564	.0359
20.	.00708	.00708	.00514	.00309	.00194	.00400	.0000061	.0572	.000526	.0577	.0339	.000362	.000359	.0650	.0650	.0633	.0374
30.	.00516	.00516	.00385	.00197	.00130	.00319		.0683	.000678	.0691	.0359	.000231	.000231	.0744	.0744	.0731	.0382
40.	.00410	.00410	.00311	.00140	.000982	.00271		.0759	.000789	.0767	.0349	.000170	.000169	.0810	.0810	.0799	.0364
50.	.00342	.00342	.00263	.00106	.000787	.00236		.0815	.000875	.0822	.0344	.000132	.000132	.0858	.0858	.0850	.0357
60.	.00293	.00293	.00228	.000825	.000658	.00211		.0863	.000936	.0873	.0336	.000108	.000108	.0903	.0903	.0896	.0347
80.	.00232	.00232	.00182	.000567	.000496	.00175		.0926	.00104	.0936	.0324	.0000792	.0000792	.0959	.0959	.0956	.0331
100.	.00193	.00193	.00153	.000417	.000397	.00151		.0974	.00111	.0984	.0306	.0000617	.0000617	.100	.100	.0999	.0311

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(barns/atom)

E (MeV)	KN $\sigma_{inc,t}$	BD $\sigma_{inc,t}$	KN $\sigma_{inc,a}$	BD $\sigma_{inc,a}$	KN $\sigma_{inc,s}$	BD $\sigma_{inc,s}$	σ_{coh}	$\sigma_{\kappa n}$	$\sigma_{\kappa e}$	$\sigma_{\kappa,t}$	$\sigma_{\kappa,a}$	$\sigma_{\gamma,t}$	$\sigma_{\gamma,a}$	$\sigma_{tot,t}$	$\sigma_{tot,t-coh}$	$\sigma_{tot,a}$	$\sigma_{tot,en}$
.001	61.6	1.78	.120	.00347	61.5	1.78	5460.					---	---	---	---	---	---
.0015	61.5	2.92	.179	.00852	61.3	2.91	5230.					---	---	---	---	---	---
M_I .001501	61.5	2.93	.180	.00855	61.3	2.92	5230.					---	---	---	---	---	---
.002	61.4	4.06	.238	.0158	61.1	4.04	4970.					1480000.	1480000.	1490000.	1480000.	1480000.	1480000.
.003	61.1	6.27	.354	.0363	60.8	6.23	4460.					770000.	770000.	775000.	770000.	770000.	770000.
M_{IV} .003664	61.0	7.66	.431	.0541	60.6	7.61	4140.					303000.	303000.	307000.	303000.	303000.	303000.
M_{IV} .003850	60.9	8.03	.452	.0595	60.5	7.97	4060.					191000.	191000.	195000.	191000.	191000.	191000.
.004	60.9	8.33	.469	.0641	60.4	8.27	3990.					599000.	599000.	603000.	599000.	599000.	599000.
M_{III} .004435	60.8	9.15	.518	.0779	60.3	9.07	3800.					542000.	542000.	546000.	542000.	542000.	542000.
.005	60.7	10.2	.581	.0977	60.1	10.1	3570.					614000.	614000.	618000.	614000.	614000.	614000.
M_{II} .005366	60.6	10.8	.622	.111	60.0	10.7	3440.					546000.	546000.	550000.	546000.	546000.	546000.
M_I .005735	60.5	11.4	.663	.125	59.8	11.3	3310.					401000.	401000.	405000.	401000.	401000.	401000.
.006	60.4	11.8	.692	.135	59.8	11.7	3220.					461000.	461000.	465000.	461000.	461000.	461000.
.008	60.0	14.8	.908	.224	59.1	14.6	2640.					349000.	349000.	353000.	349000.	349000.	349000.
.01	59.6	17.5	1.12	.328	58.5	17.2	2200.					298000.	298000.	301000.	298000.	298000.	298000.
.015	58.5	22.7	1.62	.628	56.9	22.1	1490.					354000.	354000.	357000.	354000.	354000.	354000.
L_{III} .017613	57.9	24.8	1.86	.795	56.1	24.0	1240.					293000.	293000.	296000.	293000.	293000.	293000.
.02	57.5	26.5	2.07	.956	55.4	25.5	1070.					328000.	328000.	331000.	328000.	328000.	328000.
L_{II} .021600	57.1	27.5	2.21	1.06	54.9	26.4	968.					292000.	292000.	295000.	292000.	292000.	292000.
L_I .022427	57.0	27.9	2.28	1.12	54.7	26.8	922.					134000.	134000.	137000.	134000.	134000.	134000.
.03	55.6	31.4	2.89	1.63	52.7	29.8	621.					74800.	74800.	77000.	74800.	74800.	74800.
.04	53.8	34.5	3.59	2.30	50.2	32.2	412.					24800.	24800.	26300.	24800.	24800.	24800.
.05	52.2	36.4	4.21	2.94	48.0	33.5	294.					16100.	16100.	17400.	16100.	16100.	16100.
.06	50.7	37.5	4.76	3.52	46.0	34.0	220.					38200.	27000.	39500.	38200.	38200.	27000.
.08	48.1	38.3	5.63	4.48	42.5	33.8	134.					28100.	20800.	29200.	28100.	28100.	20800.
.1	45.8	38.3	6.32	5.29	39.5	33.0	89.1					23500.	17900.	24500.	23500.	23500.	17900.
K .118670	43.9	38.4	6.84	5.97	37.1	32.4	65.3					32400.	23900.	33400.	32400.	32400.	23900.
.15	41.3	37.4	7.49	6.79	33.8	30.6	42.2					29200.	21800.	30100.	29200.	29200.	21800.
.2	37.8	35.4	8.17	7.65	29.6	27.7	24.5					34100.	25400.	35000.	34100.	34100.	25400.
.3	32.9	31.7	8.86	8.55	24.0	23.2	11.1					15900.	12900.	16600.	15900.	15900.	12900.
.4	29.4	28.7	9.12	8.75	20.3	19.9	6.30					7550.	6460.	8000.	7580.	7550.	6440.
.5	26.9	26.4	9.17	8.84	17.7	17.6	4.08					4200.	3720.	4530.	4240.	4200.	3720.
.6	24.9	24.5	9.14	8.80	15.7	15.7	2.83					2570.	2320.	2830.	2610.	2570.	2320.
.8	21.8	21.7	8.93	8.57	12.9	13.1	1.60					1200.	1110.	1370.	1240.	1210.	1110.
1.	19.6	19.5	8.64	8.03	11.0	11.5	1.03					651.	614.	778.	689.	657.	619.
1.5	16.0	15.9	7.89	7.41	8.06	8.49	.467	.781		.781	.234	396.	377.	500.	434.	403.	383.
2.	13.6	13.6	7.22	6.69	6.39	6.91	.263	2.45		2.45	1.11	1760.	559.	1860.	1800.	1770.	565.
3.	10.7	10.7	6.17	5.46	4.52	5.24	.117	5.28	.00375	5.28	3.15	973.	448.	1050.	1010.	980.	455.
4.	8.95	8.95	5.43	4.57	3.52	4.38	.0658	7.45	.0153	7.47	4.89	466.	277.	526.	501.	474.	285.
5.	7.73	7.73	4.85	3.93	2.87	3.80	.0428	9.25	.0301	9.28	6.34	164.	120.	207.	196.	173.	129.
6.	6.83	6.83	4.40	3.42	2.43	3.41	.0297	10.7	.0465	10.7	7.48	82.0	65.4	117.	111.	91.1	74.2
8.	5.59	5.59	3.73	2.72	1.86	2.87	.0168	13.1	.0781	13.2	9.21	48.3	40.5	78.8	74.7	57.5	49.3
10.	4.76	4.76	3.25	2.27	1.51	2.49	.0108	15.4	.108	15.5	10.6	32.1	27.8	59.4	56.6	41.2	36.6
15.	3.52	3.52	2.50	1.64	1.02	1.88	.00495	19.7	.167	19.9	12.6	17.0	15.3	40.3	38.7	25.9	23.9
20.	2.83	2.83	2.05	1.23	.773	1.60	.00251	23.1	.210	23.3	13.6	10.8	9.93	31.3	30.3	19.4	18.0
30.	2.06	2.06	1.54	.783	.520	1.28		27.5	.271	27.8	14.4	5.20	4.92	22.3	21.9	13.9	12.6
40.	1.63	1.63	1.24	.554	.392	1.08		30.6	.315	30.9	14.0	3.13	3.00	19.4	19.2	12.8	10.8
50.	1.37	1.37	1.05	.423	.314	.947		33.0	.349	33.3	13.8	1.70	1.65	17.8	17.7	13.1	10.3
60.	1.18	1.18	.912	.332	.263	.848		34.8	.374	35.2	13.6	1.14	1.12	17.6	17.6	14.0	10.6
80.	.927	.927	.729	.225	.198	.702		37.3	.414	37.7	13.0	.847	.833	17.9	17.9	15.0	11.1
100.	.770	.770	.611	.167	.159	.603		39.2	.445	39.6	12.3	.663	.654	18.2	18.2	15.8	11.6
												.454	.449	19.3	19.2	17.4	12.4
												.341	.338	20.6	20.6	19.1	13.2
												.210	.209	23.6	23.6	22.6	14.4
												.152	.151	26.3	26.3	25.5	15.0
												.0970	.0967	30.0	30.0	29.4	15.3
												.0708	.0707	32.6	32.6	32.2	14.6
												.0552	.0551	34.7	34.7	34.4	14.3
												.0451	.0450	36.4	36.4	36.2	14.0
												.0329	.0329	38.7	38.7	38.5	13.3
												.0256	.0256	40.4	40.4	40.2	12.5

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(cm^2/g = 0.002541 x barns/atom)

E (MeV)	$(\frac{\mu}{\rho})^{KN}_{inc,t}$	$(\frac{\mu}{\rho})^{BD}_{inc,t}$	$(\frac{\mu}{\rho})^{KN}_{inc,a}$	$(\frac{\mu}{\rho})^{BD}_{inc,a}$	$(\frac{\mu}{\rho})^{KN}_{inc,s}$	$(\frac{\mu}{\rho})^{BD}_{inc,s}$	$(\frac{\mu}{\rho})_{coh}$	$(\frac{\mu}{\rho})_{\kappa n}$	$(\frac{\mu}{\rho})_{\kappa e}$	$(\frac{\mu}{\rho})_{\kappa,t}$	$(\frac{\mu}{\rho})_{\kappa,a}$	$(\frac{\mu}{\rho})_{\tau,t}$	$(\frac{\mu}{\rho})_{\tau,a}$	$(\frac{\mu}{\rho})_{tot,t}$	$(\frac{\mu}{\rho})_{tot,t-coh}$	$(\frac{\mu}{\rho})_{tot,a}$	$(\frac{\mu}{\rho})_{tot,en}$
.001	.157	.00452	.000305	.0000088	.156	.00452	13.9					---	---	---	---	---	---
.0015	.156	.00742	.000455	.0000216	.156	.00739	13.3					---	---	---	---	---	---
M_I .001501	.156	.00745	.000457	.0000217	.156	.00742	13.3					---	---	---	---	---	---
.002	.156	.0103	.000605	.0000401	.155	.0103	12.6					3760.	3760.	3790.	3760.	3760.	3760.
.003	.155	.0159	.000900	.0000922	.154	.0158	11.3					1960.	1960.	1970.	1960.	1960.	1960.
M_V .003664	.155	.0195	.00110	.000137	.154	.0193	10.5					770.	770.	780.	770.	770.	770.
M_{IV} .003850	.155	.0204	.00115	.000151	.154	.0203	10.3					485.	485.	495.	485.	485.	485.
.004	.155	.0212	.00119	.000163	.153	.0210	10.1					1520.	1520.	1530.	1520.	1520.	1520.
M_{III} .004435	.154	.0233	.00132	.000198	.153	.0230	9.66					1380.	1380.	1390.	1380.	1380.	1380.
.005	.154	.0259	.00148	.000248	.153	.0257	9.07					1560.	1560.	1570.	1560.	1560.	1560.
M_{II} .005366	.154	.0274	.00158	.000282	.152	.0272	8.74					1390.	1390.	1400.	1390.	1390.	1390.
M_I .005735	.154	.0290	.00168	.000318	.152	.0287	8.41					1020.	1020.	1030.	1020.	1020.	1020.
.006	.153	.0300	.00176	.000343	.152	.0297	8.18					1170.	1170.	1180.	1170.	1170.	1170.
.008	.152	.0376	.00231	.000569	.150	.0371	6.71					887.	887.	897.	887.	887.	887.
.01	.151	.0445	.00285	.000833	.149	.0437	5.59					757.	757.	765.	757.	757.	757.
.015	.149	.0577	.00412	.00160	.145	.0562	3.79					900.	900.	907.	900.	900.	900.
L_{III} .017613	.147	.0630	.00473	.00202	.143	.0610	3.15					745.	745.	752.	745.	745.	745.
.02	.146	.0673	.00526	.00243	.141	.0648	2.72					833.	833.	841.	833.	833.	833.
L_{II} .021600	.145	.0699	.00562	.00269	.140	.0671	2.46					742.	742.	750.	742.	742.	742.
L_I .022427	.145	.0709	.00579	.00285	.139	.0681	2.34					340.	340.	348.	340.	340.	340.
.03	.141	.0798	.00734	.00414	.134	.0757	1.58					190.	190.	196.	190.	190.	190.
.04	.137	.0877	.00912	.00584	.128	.0818	1.05					63.0	63.0	66.8	63.0	63.0	63.0
.05	.133	.0925	.0107	.00747	.122	.0851	.747					40.9	40.9	44.2	40.9	40.9	40.9
.06	.129	.0953	.0121	.00894	.117	.0864	.559					97.1	68.6	100.	97.1	97.1	68.6
.08	.122	.0973	.0143	.0114	.108	.0859	.340					71.4	52.9	74.2	71.4	71.4	52.9
.1	.116	.0973	.0161	.0134	.100	.0839	.226					59.7	45.5	62.3	59.7	59.7	45.5
K .118670	.112	.0976	.0174	.0152	.0943	.0823	.166					82.3	60.7	84.9	82.3	82.3	60.7
.15	.105	.0950	.0190	.0173	.0859	.0778	.107					74.2	55.4	76.5	74.2	74.2	55.4
.2	.0960	.0900	.0208	.0194	.0752	.0704	.0623					86.6	64.5	88.9	86.6	86.6	64.5
.3	.0836	.0805	.0225	.0217	.0610	.0590	.0282					40.4	32.8	42.2	40.4	40.4	32.8
.4	.0747	.0729	.0232	.0222	.0516	.0506	.0160					19.2	16.4	20.3	19.3	19.2	16.4
.5	.0684	.0671	.0233	.0225	.0450	.0447	.0104					10.7	9.45	11.5	10.8	10.7	9.45
.6	.0633	.0623	.0232	.0224	.0399	.0399	.00719					6.53	5.90	7.19	6.63	6.53	5.90
.8	.0554	.0551	.0227	.0218	.0328	.0333	.00407					3.05	2.82	3.48	3.15	3.07	2.82
1.	.0498	.0495	.0220	.0204	.0280	.0292	.00262					1.65	1.56	1.98	1.75	1.67	1.57
1.5	.0407	.0404	.0200	.0188	.0205	.0216	.00119	.00198		.00198	.000595	1.01	.958	1.27	1.10	1.02	.973
2.	.0346	.0346	.0183	.0170	.0162	.0176	.000668	.00623		.00623	.00282	4.47	1.42	4.73	4.57	4.50	1.44
3.	.0272	.0272	.0157	.0139	.0115	.0133	.000297	.0134	.00000953	.0134	.00800	2.47	1.14	2.67	2.57	2.49	1.16
4.	.0227	.0227	.0138	.0116	.00894	.0111	.000167	.0189	.0000389	.0190	.0124	1.18	.704	1.34	1.27	1.20	.724
5.	.0196	.0196	.0123	.00999	.00729	.00966	.000109	.0235	.0000765	.0236	.0161	.417	.305	.526	.498	.440	.328
6.	.0174	.0174	.0112	.00869	.00617	.00866	.0000755	.0272	.000118	.0272	.0190	.208	.166	.297	.282	.231	.189
8.	.0142	.0142	.00948	.00691	.00473	.00729	.0000427	.0333	.000198	.0335	.0234	.123	.103	.200	.190	.146	.125
10.	.0121	.0121	.00826	.00577	.00384	.00633	.0000274	.0391	.000274	.0394	.0269	.0816	.0706	.151	.144	.105	.0930
15.	.00894	.00894	.00635	.00417	.00259	.00478	.0000126	.0501	.000424	.0506	.0320	.0432	.0389	.102	.0983	.0658	.0807
20.	.00719	.00719	.00521	.00313	.00196	.00407	.0000064	.0587	.000534	.0592	.0366	.0274	.0252	.0795	.0770	.0493	.0457
30.	.00523	.00523	.00391	.00199	.00132	.00325		.0699	.000689	.0706	.0366	.0132	.0125	.0567	.0556	.0353	.0320
40.	.00414	.00414	.00315	.00141	.000996	.00274		.0778	.000800	.0785	.0356	.00795	.00762	.0493	.0488	.0325	.0274
50.	.00348	.00348	.00267	.00107	.000798	.00241		.0839	.000887	.0846	.0351	.00432	.00419	.0452	.0450	.0333	.0262
60.	.00300	.00300	.00232	.000844	.000668	.00215		.0884	.000950	.0894	.0346	.00290	.00285	.0447	.0447	.0356	.0269
80.	.00236	.00236	.00185	.000572	.000503	.00178		.0948	.00105	.0958	.0330	.00215	.00212	.0455	.0455	.0381	.0282
100.	.00196	.00196	.00155	.000424	.000404	.00153		.0996	.00113	.101	.0313	.00168	.00166	.0462	.0462	.0401	.0295
												.00115	.00114	.0490	.0488	.0442	.0315
												.000866	.000859	.0523	.0523	.0485	.0335
												.000534	.000531	.0600	.0600	.0574	.0366
												.000386	.000384	.0668	.0668	.0648	.0381
												.000246	.000246	.0762	.0762	.0747	.0389
												.000180	.000180	.0828	.0828	.0818	.0371
												.000140	.000140	.0882	.0882	.0874	.0363
												.000115	.000114	.0925	.0925	.0920	.0356
												.0000836	.0000836	.0983	.0983	.0978	.0338
												.0000650	.0000650	.103	.103	.102	.0318

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(barns/atom)

E (MeV)	KN $\sigma_{inc,t}$	BD $\sigma_{inc,t}$	KN $\sigma_{inc,a}$	BD $\sigma_{inc,a}$	KN $\sigma_{inc,s}$	BD $\sigma_{inc,s}$	σ_{coh}	$\sigma_{n,n}$	$\sigma_{n,e}$	$\sigma_{n,t}$	$\sigma_{n,a}$	$\sigma_{\gamma,t}$	$\sigma_{\gamma,a}$	$\sigma_{tot,t}$	$\sigma_{tot,t-coh}$	$\sigma_{tot,a}$	$\sigma_{tot,en}$
.001	62.3	1.76	.121	.00343	62.2	1.76	5590.					---	---	---	---	---	---
.0015	62.2	2.91	.181	.00849	62.0	2.90	5360.					---	---	---	---	---	---
N_I .001562	62.1	3.05	.189	.00926	62.0	3.04	5330.					---	---	---	---	---	---
.002	62.0	4.06	.241	.0158	61.8	4.04	5110.					1410000.	1410000.	1420000.	1410000.	1410000.	1410000.
.003	61.8	6.26	.358	.0363	61.4	6.22	4600.					802000.	802000.	807000.	802000.	802000.	802000.
N_{IV} .003778	61.6	7.88	.448	.0573	61.2	7.82	4220.					313000.	313000.	318000.	313000.	313000.	313000.
N_{IV} .003973	61.6	8.26	.471	.0631	61.1	8.20	4130.					185000.	185000.	189000.	185000.	185000.	185000.
.004	61.6	8.31	.474	.0639	61.1	8.25	4110.					579000.	579000.	583000.	579000.	579000.	579000.
N_{III} .004568	61.4	9.39	.539	.0823	60.9	9.31	3860.					523000.	523000.	527000.	523000.	523000.	523000.
.005	61.3	10.2	.587	.0977	60.7	10.1	3680.					592000.	592000.	596000.	592000.	592000.	592000.
N_{II} .005555	61.2	11.1	.650	.118	60.6	11.0	3470.					579000.	579000.	583000.	579000.	579000.	579000.
N_I .005927	61.1	11.7	.691	.132	60.4	11.6	3330.					388000.	388000.	392000.	388000.	388000.	388000.
.006	61.1	11.9	.699	.136	60.4	11.8	3310.					447000.	447000.	451000.	447000.	447000.	447000.
.008	60.6	14.9	.918	.226	59.7	14.7	2710.					362000.	362000.	366000.	362000.	362000.	362000.
.01	60.2	17.5	1.13	.328	59.1	17.2	2260.					286000.	286000.	289000.	286000.	286000.	286000.
.015	59.1	22.8	1.63	.631	57.5	22.2	1530.					340000.	340000.	343000.	340000.	340000.	340000.
L_{III} .018063	58.5	25.3	1.92	.830	56.6	24.5	1240.					282000.	282000.	285000.	282000.	282000.	282000.
.02	58.1	26.7	2.10	.964	56.0	25.7	1100.					315000.	315000.	318000.	315000.	315000.	315000.
L_{II} .022270	57.6	28.1	2.29	1.12	55.3	27.0	956.					305000.	305000.	308000.	305000.	305000.	305000.
L_I .023109	57.5	28.5	2.36	1.17	55.1	27.3	911.					141000.	141000.	144000.	141000.	141000.	141000.
.03	56.2	31.7	2.92	1.65	53.3	30.1	638.					78200.	78200.	80500.	78200.	78200.	78200.
.04	54.4	34.8	3.63	2.32	50.8	32.5	424.					26000.	26000.	27600.	26000.	26000.	26000.
.05	52.8	36.7	4.26	2.96	48.5	33.7	302.					15800.	15800.	17100.	15800.	15800.	15800.
.06	51.3	37.8	4.81	3.55	46.5	34.3	226.					37100.	26200.	38400.	37100.	37100.	26200.
.08	48.6	38.6	5.69	4.52	42.9	34.1	138.					29200.	21500.	30300.	29200.	29200.	21500.
.1	46.3	38.6	6.39	5.33	39.9	33.3	91.6					22600.	17200.	23600.	22600.	22600.	17200.
K .121797	44.1	38.7	6.99	6.13	37.1	32.6	63.9					31200.	23100.	32200.	31200.	31200.	23100.
.15	41.7	37.7	7.57	6.84	34.1	30.9	43.4					28100.	21100.	29000.	28100.	28100.	21100.
.2	38.2	35.7	8.26	7.72	29.9	28.0	25.2					32800.	24400.	33700.	32800.	32800.	24400.
.3	33.2	32.0	8.96	8.63	24.3	23.4	11.5					16500.	13300.	17200.	16500.	16500.	13300.
.4	29.8	29.0	9.22	8.84	20.5	20.2	6.48					7870.	6710.	8330.	7900.	7870.	6710.
.5	27.2	26.7	9.27	8.94	17.9	17.8	4.20					4390.	3870.	4730.	4430.	4390.	3870.
.6	25.1	24.8	9.24	8.90	15.9	15.9	2.91					2700.	2440.	2960.	2740.	2700.	2440.
.8	22.1	21.9	9.03	8.65	13.1	13.2	1.65					1250.	1160.	1430.	1290.	1260.	1160.
1.	19.9	19.7	8.73	8.10	11.1	11.6	1.06					680.	640.	810.	719.	686.	645.
1.5	16.1	16.1	7.98	7.50	8.15	8.60	.480	.810		.810	.243	387.	368.	490.	426.	394.	374.
2.	13.8	13.7	7.30	6.74	6.45	6.96	.270	2.52		2.52	1.14	1710.	544.	1810.	1750.	1720.	550.
3.	10.8	10.8	6.24	5.51	4.57	5.29	.121	5.40	.00379	5.40	3.22	1000.	450.	1080.	1040.	1010.	457.
4.	9.04	9.04	5.49	4.61	3.56	4.43	.0678	7.60	.0155	7.62	4.99	482.	282.	543.	518.	490.	290.
5.	7.81	7.81	4.90	3.97	2.91	3.84	.0441	9.45	.0304	9.48	6.48	171.	124.	215.	203.	180.	133.
6.	6.90	6.90	4.44	3.45	2.46	3.45	.0306	10.9	.0470	10.9	7.61	85.3	67.6	121.	114.	94.5	78.4
8.	5.65	5.65	3.77	2.74	1.88	2.91	.0172	13.4	.0789	13.5	9.39	51.0	42.5	81.9	77.7	60.3	51.4
10.	4.81	4.81	3.29	2.29	1.52	2.52	.0110	15.7	.110	15.8	10.8	33.7	29.0	61.4	58.5	42.9	37.9
15.	3.56	3.56	2.53	1.66	1.03	1.90	.00509	20.2	.168	20.4	12.8	17.8	16.0	41.3	39.7	26.8	24.6
20.	2.86	2.86	2.08	1.24	.781	1.62	.00260	23.5	.212	23.7	13.8	11.4	10.5	32.2	31.1	20.1	18.6
30.	2.08	2.08	1.55	.788	.525	1.29		28.0	.274	28.3	14.6	5.45	5.15	22.8	22.4	14.2	12.9
40.	1.65	1.65	1.26	.559	.397	1.09		31.3	.318	31.6	14.3	3.30	3.16	19.8	19.5	13.1	11.0
50.	1.38	1.38	1.06	.425	.318	.955		33.5	.353	33.9	14.0	1.78	1.73	18.1	18.0	13.4	10.5
60.	1.19	1.19	.922	.333	.266	.857		35.5	.378	35.9	13.8	1.19	1.17	17.9	17.8	14.3	10.8
80.	.937	.937	.737	.228	.200	.709		38.1	.419	38.5	13.2	.885	.870	18.2	18.2	15.3	11.3
100.	.778	.778	.618	.168	.160	.610		40.0	.450	40.4	12.5	.698	.688	18.5	18.5	16.0	11.7
												.479	.474	19.6	19.6	17.7	12.6
												.361	.358	21.0	21.0	19.5	13.4
												.220	.219	24.2	24.2	23.1	14.7
												.160	.159	26.7	26.7	25.9	15.2
												.102	.102	30.5	30.5	30.0	15.5
												.0740	.0738	33.3	33.3	32.9	14.9
												.0579	.0578	35.3	35.3	35.0	14.5
												.0472	.0471	37.1	37.1	36.9	14.2
												.0343	.0343	39.5	39.5	39.3	13.5
												.0269	.0269	41.2	41.2	41.0	12.7

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(cm^2/g = 0.002489 x barns/atom)

E (MeV)	$(\frac{\mu}{\rho})^{KN}_{inc,t}$	$(\frac{\mu}{\rho})^{BD}_{inc,t}$	$(\frac{\mu}{\rho})^{KN}_{inc,a}$	$(\frac{\mu}{\rho})^{BD}_{inc,a}$	$(\frac{\mu}{\rho})^{KN}_{inc,s}$	$(\frac{\mu}{\rho})^{BD}_{inc,s}$	$(\frac{\mu}{\rho})_{coh}$	$(\frac{\mu}{\rho})_{\kappa n}$	$(\frac{\mu}{\rho})_{\kappa e}$	$(\frac{\mu}{\rho})_{\kappa,t}$	$(\frac{\mu}{\rho})_{\kappa,a}$	$(\frac{\mu}{\rho})_{\tau,t}$	$(\frac{\mu}{\rho})_{\tau,a}$	$(\frac{\mu}{\rho})_{tot,t}$	$(\frac{\mu}{\rho})_{tot,t-coh}$	$(\frac{\mu}{\rho})_{tot,a}$	$(\frac{\mu}{\rho})_{tot,en}$
.001	.155	.00438	.000301	.0000085	.155	.00438	13.9					---	---	---	---	---	---
.0015	.155	.00724	.000451	.0000211	.154	.00722	13.3					---	---	---	---	---	---
M_I .001562	.155	.00759	.000470	.0000230	.154	.00757	13.3					---	---	---	---	---	---
												3510.	3510.	3530.	3510.	3510.	3510.
.002	.154	.0101	.000600	.0000393	.154	.0101	12.7					2000.	2000.	2010.	2000.	2000.	2000.
.003	.154	.0156	.000891	.0000904	.153	.0155	11.4					779.	779.	792.	779.	779.	779.
M_V .003778	.153	.0196	.00112	.000143	.152	.0195	10.5					460.	460.	470.	460.	460.	460.
M_{IV} .003973	.153	.0206	.00117	.000157	.152	.0204	10.3					1440.	1440.	1450.	1440.	1440.	1440.
												1300.	1300.	1310.	1300.	1300.	1300.
.004	.153	.0207	.00118	.000159	.152	.0205	10.2					1470.	1470.	1480.	1470.	1470.	1470.
M_{III} .004568	.153	.0234	.00134	.000205	.152	.0232	9.61					1440.	1440.	1450.	1440.	1440.	1440.
												966.	966.	976.	966.	966.	966.
.005	.153	.0254	.00146	.000243	.151	.0251	9.16					1110.	1110.	1120.	1110.	1110.	1110.
M_{II} .005555	.152	.0276	.00162	.000294	.151	.0274	8.64					901.	901.	911.	901.	901.	901.
												712.	712.	719.	712.	712.	712.
M_I .005927	.152	.0291	.00172	.000329	.150	.0289	8.29					846.	846.	854.	846.	846.	846.
												702.	702.	709.	702.	702.	702.
.006	.152	.0296	.00174	.000339	.150	.0294	8.24					784.	784.	792.	784.	784.	784.
.008	.151	.0371	.00228	.000563	.149	.0366	6.75					759.	759.	767.	759.	759.	759.
.01	.150	.0436	.00281	.000816	.147	.0428	5.63					351.	351.	358.	351.	351.	351.
.015	.147	.0567	.00406	.00157	.143	.0553	3.81					195.	195.	200.	195.	195.	195.
L_{III} .018063	.146	.0630	.00478	.00207	.141	.0610	3.09					64.7	64.7	68.7	64.7	64.7	64.7
												39.3	39.3	42.6	39.3	39.3	39.3
.02	.145	.0665	.00523	.00240	.139	.0640	2.74					92.3	65.2	95.6	92.3	92.3	65.2
L_{II} .022270	.143	.0699	.00570	.00279	.138	.0672	2.38					72.7	53.5	75.4	72.7	72.7	53.5
												56.3	42.8	58.7	56.3	56.3	42.8
L_I .023109	.143	.0709	.00587	.00291	.137	.0679	2.27					77.7	57.5	80.1	77.7	77.7	57.5
												69.9	52.5	72.2	69.9	69.9	52.5
												81.6	60.7	83.9	81.6	81.6	60.7
.03	.140	.0789	.00727	.00411	.133	.0749	1.59					41.1	33.1	42.8	41.1	41.1	33.1
.04	.135	.0866	.00904	.00577	.126	.0809	1.06					19.6	16.7	20.7	19.7	19.6	16.7
.05	.131	.0913	.0106	.00737	.121	.0839	.752					10.9	9.63	11.8	11.0	10.9	9.63
.06	.128	.0941	.0120	.00884	.116	.0854	.563					6.72	6.07	7.37	6.82	6.72	6.07
.08	.121	.0961	.0142	.0113	.107	.0849	.343					3.11	2.89	3.56	3.21	3.14	2.89
.1	.115	.0961	.0159	.0133	.0993	.0829	.228					1.69	1.59	2.02	1.79	1.71	1.61
K .121797	.110	.0963	.0174	.0153	.0923	.0811	.159					.963	.916	1.22	1.06	.981	.931
												4.26	1.35	4.51	4.36	4.28	1.37
.15	.104	.0938	.0188	.0170	.0849	.0769	.108					2.49	1.12	2.69	2.59	2.51	1.14
.2	.0951	.0889	.0206	.0192	.0744	.0697	.0627					1.20	.702	1.35	1.29	1.22	.722
.3	.0826	.0796	.0223	.0215	.0605	.0582	.0286					.426	.309	.535	.505	.448	.331
.4	.0742	.0722	.0229	.0220	.0510	.0503	.0161					.212	.168	.301	.284	.235	.190
.5	.0677	.0665	.0231	.0223	.0446	.0443	.0105					.127	.106	.204	.193	.150	.128
.6	.0625	.0617	.0230	.0222	.0396	.0396	.00724					.0839	.0722	.153	.146	.107	.0943
.8	.0550	.0545	.0225	.0215	.0326	.0329	.00411					.0443	.0398	.103	.0988	.0667	.0612
1.	.0495	.0490	.0217	.0202	.0276	.0289	.00264					.0284	.0261	.0801	.0774	.0500	.0463
1.5	.0401	.0401	.0199	.0187	.0203	.0214	.00119	.00202		.00202	.000605	.0136	.0128	.0567	.0558	.0353	.0321
2.	.0343	.0341	.0182	.0168	.0161	.0173	.000672	.00627		.00627	.00284	.00821	.00787	.0493	.0485	.0326	.0274
3.	.0269	.0269	.0155	.0137	.0114	.0132	.000301	.0134	.00000943	.0134	.00801	.00443	.00431	.0451	.0448	.0334	.0261
4.	.0225	.0225	.0137	.0115	.00886	.0110	.000169	.0189	.0000386	.0190	.0124	.00296	.00291	.0446	.0443	.0356	.0264
5.	.0194	.0194	.0122	.00988	.00724	.00956	.000110	.0235	.0000757	.0236	.0161	.00220	.00217	.0453	.0453	.0381	.0281
6.	.0172	.0172	.0111	.00859	.00612	.00859	.0000762	.0271	.000117	.0271	.0189	.00174	.00171	.0460	.0460	.0398	.0291
8.	.0141	.0141	.00938	.00682	.00468	.00724	.0000428	.0334	.000196	.0336	.0234	.00119	.00118	.0488	.0488	.0441	.0314
10.	.0120	.0120	.00819	.00570	.00378	.00627	.0000274	.0391	.000274	.0393	.0269	.000899	.000891	.0523	.0523	.0485	.0334
15.	.00886	.00886	.00630	.00413	.00256	.00473	.0000127	.0503	.000418	.0508	.0319	.000548	.000545	.0602	.0602	.0575	.0366
20.	.00712	.00712	.00518	.00309	.00194	.00403	.0000065	.0585	.000528	.0590	.0343	.000398	.000396	.0665	.0665	.0645	.0378
30.	.00518	.00518	.00386	.00196	.00131	.00321		.0697	.000682	.0704	.0363	.000254	.000254	.0759	.0759	.0747	.0386
40.	.00411	.00411	.00314	.00139	.000988	.00271		.0779	.000792	.0787	.0356	.000184	.000184	.0829	.0829	.0819	.0371
50.	.00343	.00343	.00264	.00106	.000792	.00238		.0834	.000879	.0844	.0348	.000144	.000144	.0879	.0879	.0871	.0361
60.	.00296	.00296	.00229	.000829	.000662	.00213		.0884	.000941	.0894	.0343	.000117	.000117	.0923	.0923	.0918	.0353
80.	.00237	.00233	.00183	.000567	.000498	.00176		.0948	.00104	.0958	.0329	.0000854	.0000854	.0983	.0983	.0978	.0336
100.	.00194	.00194	.00154	.000418	.000398	.00152		.0996	.00112	.101	.0311	.0000670	.0000670	.103	.103	.102	.0316

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(barns/atom)

E (MeV)	$\sigma^{KN}_{inc,t}$	$\sigma^{BD}_{inc,t}$	$\sigma^{KN}_{inc,a}$	$\sigma^{BD}_{inc,a}$	$\sigma^{KN}_{inc,s}$	$\sigma^{BD}_{inc,s}$	σ_{coh}	$\sigma_{n,n}$	$\sigma_{n,e}$	$\sigma_{n,t}$	$\sigma_{n,a}$	$\sigma_{\gamma,t}$	$\sigma_{\gamma,a}$	$\sigma_{tot,t}$	$\sigma_{tot,t-coh}$	$\sigma_{tot,a}$	$\sigma_{tot,en}$
.001	62.9	1.75	.123	.00341	62.8	1.75	5720.					---	---	---	---	---	---
.0015	62.8	2.90	.183	.00846	62.6	2.89	5490.					---	---	---	---	---	---
N_I .001625	62.8	3.19	.198	.0101	62.6	3.18	5430.					---	---	---	---	---	---
												1340000.	1340000.	1350000.	1340000.	1340000.	1340000.
.002	62.7	4.05	.243	.0157	62.5	4.03	5240.					835000.	835000.	840000.	835000.	835000.	835000.
.003	62.5	6.25	.362	.0362	62.1	6.21	4710.					326000.	326000.	331000.	326000.	326000.	326000.
M_V .003894	62.2	8.09	.467	.0606	61.8	8.03	4270.					179000.	179000.	183000.	179000.	179000.	179000.
												560000.	560000.	564000.	560000.	560000.	560000.
.004	62.2	8.30	.479	.0639	61.7	8.24	4220.					530000.	530000.	534000.	530000.	530000.	530000.
M_{IV} .004100	62.2	8.49	.490	.0669	61.7	8.42	4170.					505000.	505000.	509000.	505000.	505000.	505000.
												572000.	572000.	576000.	572000.	572000.	572000.
M_{III} .004703	62.1	9.62	.560	.0868	61.5	9.53	3900.					376000.	376000.	380000.	376000.	376000.	376000.
												433000.	433000.	437000.	433000.	433000.	433000.
.005	62.0	10.2	.594	.0977	61.4	10.1	3770.					377000.	377000.	381000.	377000.	377000.	377000.
M_{II} .005748	61.8	11.5	.678	.126	61.1	11.4	3480.					275000.	275000.	278000.	275000.	275000.	275000.
												327000.	327000.	330000.	327000.	327000.	327000.
.006	61.7	11.9	.707	.136	61.0	11.8	3390.					288000.	288000.	291000.	288000.	288000.	288000.
M_I .006122	61.7	12.1	.72	.141	61.0	12.0	3350.					272000.	272000.	275000.	272000.	272000.	272000.
												303000.	303000.	306000.	303000.	303000.	303000.
.008	61.3	14.9	.928	.226	60.4	14.7	2780.					149000.	149000.	152000.	149000.	149000.	149000.
.01	60.8	17.6	1.14	.330	59.7	17.3	2310.					82200.	82200.	84500.	82200.	82200.	82200.
.015	59.7	23.0	1.65	.636	58.1	22.4	1560.					27200.	27200.	28800.	27200.	27200.	27200.
L_{III} .018519	59.	25.8	1.98	.866	57.0	24.9	1230.					15400.	15400.	16700.	15400.	15400.	15400.
												36100.	25500.	37400.	36100.	36100.	25500.
.02	58.7	26.9	2.12	.971	56.6	25.9	1120.					30200.	22000.	31300.	30200.	30200.	22000.
L_{II} .022958	58.1	28.7	2.38	1.17	55.7	27.5	943.					21700.	16600.	22700.	21700.	21700.	16600.
												30000.	22200.	31000.	30000.	30000.	22200.
L_I .023812	57.9	29.1	2.45	1.23	55.5	27.9	898.					27000.	20300.	27900.	27000.	27000.	20300.
												31600.	23600.	32500.	31600.	31600.	23600.
.03	56.8	31.9	2.95	1.66	53.8	30.2	654.					17300.	13800.	18000.	17300.	17300.	13800.
.04	55.0	35.0	3.67	2.33	51.3	32.7	434.					8230.	6990.	8700.	8270.	8230.	6990.
.05	53.3	37.0	4.30	2.99	49.0	34.0	310.					4570.	4020.	4920.	4610.	4570.	4020.
.06	51.8	38.1	4.86	3.57	47.0	34.5	232.					2830.	2540.	3100.	2870.	2830.	2540.
.08	49.1	39.0	5.75	4.57	43.4	34.4	142.					1310.	1210.	1490.	1350.	1320.	1210.
.1	46.8	39.0	6.46	5.38	40.4	33.6	94.1					715.	672.	848.	754.	721.	677.
K .124990	44.3	39.0	7.14	6.28	37.2	32.7	62.6					378.	360.	480.	417.	385.	366.
												1660.	528.	1760.	1700.	1670.	534.
.15	42.1	38.1	7.65	6.92	34.5	31.2	44.6					1050.	453.	1130.	1090.	1060.	460.
.2	38.6	36.1	8.35	7.80	30.3	28.3	25.8					501.	287.	563.	537.	509.	295.
.3	33.6	32.3	9.05	8.71	24.5	23.6	11.8					178.	127.	222.	210.	187.	136.
.4	30.1	29.3	9.32	8.94	20.8	20.4	6.66					89.5	70.4	125.	119.	98.8	79.3
.5	27.5	27.0	9.37	9.05	18.1	18.0	4.32					53.2	44.1	84.5	80.2	62.6	53.1
.6	25.4	25.1	9.34	9.01	16.1	16.1	3.00					35.0	30.0	63.1	60.1	44.3	39.0
.8	22.3	22.1	9.13	8.73	13.2	13.4	1.69					18.7	16.7	42.5	40.8	27.8	25.4
1.	20.1	19.9	8.83	8.18	11.2	11.7	1.08					11.9	10.9	32.9	31.8	20.7	19.1
1.5	16.3	16.2	8.06	7.55	8.24	8.65	.491	.840		.840	.252	5.70	5.38	23.2	22.7	14.6	13.2
2.	13.9	13.9	7.38	6.84	6.52	7.06	.279	2.60		2.60	1.18	3.47	3.32	20.2	20.0	13.4	11.3
3.	10.9	10.9	6.31	5.55	4.62	5.35	.124	5.53	.00383	5.53	3.29	1.86	1.81	18.4	18.3	13.7	10.6
4.	9.14	9.14	5.55	4.65	3.59	4.49	.0697	7.80	.0156	7.82	5.11	1.25	1.22	18.3	18.2	14.6	11.0
5.	7.89	7.89	4.96	4.00	2.94	3.89	.0453	9.65	.0307	9.68	6.60	.930	.914	18.5	18.5	15.6	11.5
6.	6.97	6.97	4.49	3.48	2.48	3.49	.0314	11.1	.0474	11.1	7.74	.730	.720	18.8	18.8	16.3	11.9
8.	5.71	5.71	3.81	2.76	1.90	2.95	.0177	13.6	.0797	13.7	9.52	.500	.495	19.9	19.9	18.0	12.8
10.	4.86	4.86	3.32	2.31	1.54	2.55	.0113	16.0	.111	16.1	10.9	.380	.377	21.4	21.3	19.8	13.6
15.	3.60	3.60	2.55	1.67	1.04	1.93	.00522	20.5	.170	20.7	12.9	.230	.229	24.5	24.5	23.5	14.8
20.	2.89	2.89	2.10	1.25	.789	1.64	.00270	24.0	.214	24.2	14.0	.167	.166	27.3	27.3	26.5	15.4
30.	2.10	2.10	1.57	.796	.531	1.30		28.6	.277	28.9	14.8	.107	.107	31.1	31.1	30.6	15.7
40.	1.67	1.67	1.27	.564	.401	1.11		31.9	.321	32.2	14.4	.0779	.0777	33.9	33.9	33.5	15.0
50.	1.39	1.39	1.07	.427	.321	.963		34.2	.356	34.6	14.2	.0608	.0607	36.1	36.1	35.7	14.7
60.	1.20	1.20	.932	.336	.269	.864		36.1	.382	36.5	13.9	.0497	.0496	37.7	37.7	37.5	14.3
80.	.947	.947	.745	.229	.202	.718		38.8	.423	39.2	13.3	.0362	.0362	40.2	40.2	40.0	13.6
100.	.787	.787	.624	.170	.162	.617		40.6	.454	41.1	12.6	.0281	.0281	41.9	41.9	41.8	12.8

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(cm^2/g = 0.002478 x barns/atom)

E (MeV)	$(\frac{\mu}{\rho})^{KN}_{inc,t}$	$(\frac{\mu}{\rho})^{BD}_{inc,t}$	$(\frac{\mu}{\rho})^{KN}_{inc,a}$	$(\frac{\mu}{\rho})^{BD}_{inc,a}$	$(\frac{\mu}{\rho})^{KN}_{inc,s}$	$(\frac{\mu}{\rho})^{BD}_{inc,s}$	$(\frac{\mu}{\rho})_{coh}$	$(\frac{\mu}{\rho})_{\kappa_n}$	$(\frac{\mu}{\rho})_{\kappa_e}$	$(\frac{\mu}{\rho})_{\kappa,t}$	$(\frac{\mu}{\rho})_{\kappa,a}$	$(\frac{\mu}{\rho})_{r,t}$	$(\frac{\mu}{\rho})_{r,a}$	$(\frac{\mu}{\rho})_{tot,t}$	$(\frac{\mu}{\rho})_{tot,t-coh}$	$(\frac{\mu}{\rho})_{tot,a}$	$(\frac{\mu}{\rho})_{tot,en}$
.001	.156	.00434	.000305	.0000085	.156	.00434	14.2					---	---	---	---	---	---
.0015	.156	.00719	.000453	.0000210	.155	.00716	13.6					---	---	---	---	---	---
M_I .001625	.156	.00790	.000491	.0000250	.155	.00788	13.5					---	---	---	---	---	---
												3320.	3320.	3390.	3320.	3320.	3320.
.002	.155	.0100	.000602	.0000389	.155	.00999	13.0					2070.	2070.	2080.	2070.	2070.	2070.
.003	.155	.0155	.000897	.0000897	.154	.0154	11.7					808.	808.	820.	808.	808.	808.
M_V .003894	.154	.0200	.00116	.000150	.153	.0199	10.6					444.	444.	453.	444.	444.	444.
												1390.	1390.	1400.	1390.	1390.	1390.
.004	.154	.0206	.00119	.000158	.153	.0204	10.5					1310.	1310.	1320.	1310.	1310.	1310.
M_{IV} .004100	.154	.0210	.00121	.000166	.153	.0209	10.3					1250.	1250.	1260.	1250.	1250.	1250.
												1420.	1420.	1430.	1420.	1420.	1420.
M_{III} .004703	.154	.0238	.00139	.000215	.152	.0236	9.66					932.	932.	942.	932.	932.	932.
												1070.	1070.	1080.	1070.	1070.	1070.
.005	.154	.0253	.00147	.000242	.152	.0250	9.34					934.	934.	944.	934.	934.	934.
M_{II} .005748	.153	.0285	.00168	.000312	.151	.0282	8.62					681.	681.	689.	681.	681.	681.
												810.	810.	818.	810.	810.	810.
.006	.153	.0295	.00175	.000337	.151	.0292	8.40					714.	714.	721.	714.	714.	714.
M_I .006122	.153	.0300	.00178	.000349	.151	.0297	8.30					674.	674.	681.	674.	674.	674.
												751.	751.	758.	751.	751.	751.
.008	.152	.0369	.00230	.000560	.150	.0364	6.89					369.	369.	377.	369.	369.	369.
.01	.151	.0436	.00282	.000818	.148	.0429	5.72					204.	204.	209.	204.	204.	204.
.015	.148	.0570	.00409	.00158	.144	.0555	3.87					67.4	67.4	71.4	67.4	67.4	67.4
L_{III} .018519	.146	.0639	.00491	.00215	.141	.0617	3.05					38.2	38.2	41.4	38.2	38.2	38.2
												89.5	63.2	92.7	89.5	89.5	63.2
.02	.145	.0667	.00525	.00241	.140	.0642	2.78					74.8	54.5	77.6	74.8	74.8	54.5
L_{II} .022958	.144	.0711	.00590	.00290	.138	.0681	2.34					53.8	41.1	56.3	53.8	53.8	41.1
												74.3	55.0	76.8	74.3	74.3	55.0
L_I .023812	.143	.0721	.00607	.00305	.138	.0691	2.23					66.9	50.3	69.1	66.9	66.9	50.3
												78.3	58.5	80.5	78.3	78.3	58.5
.03	.141	.0790	.00731	.00411	.133	.0748	1.62					42.9	34.2	44.6	42.9	42.9	34.2
.04	.136	.0867	.00909	.00577	.127	.0810	1.08					20.4	17.3	21.6	20.5	20.4	17.3
.05	.132	.0917	.0107	.00741	.121	.0843	.768					11.3	9.96	12.2	11.4	11.3	9.96
.06	.128	.0944	.0120	.00885	.116	.0855	.575					7.01	6.29	7.68	7.11	7.01	6.29
.08	.122	.0966	.0142	.0113	.108	.0852	.352					3.25	3.00	3.69	3.35	3.27	3.00
.1	.116	.0966	.0160	.0133	.100	.0833	.233					1.77	1.67	2.10	1.87	1.79	1.68
K .124990	.110	.0966	.0177	.0156	.0922	.0810	.155					.937	.892	1.19	1.03	.954	.907
												4.11	1.31	4.36	4.21	4.14	1.32
.15	.104	.0944	.0190	.0171	.0855	.0773	.111					2.60	1.12	2.80	2.78	2.63	1.14
.2	.0957	.0895	.0207	.0193	.0751	.0701	.0839					1.24	.711	1.40	1.33	1.24	.731
.3	.0833	.0800	.0224	.0216	.0607	.0585	.0292					.441	.315	.550	.520	.463	.337
.4	.0746	.0726	.0231	.0222	.0515	.0506	.0165					.222	.174	.310	.295	.245	.197
.5	.0681	.0669	.0232	.0224	.0449	.0446	.0107					.132	.109	.209	.199	.155	.132
.6	.0629	.0622	.0231	.0223	.0399	.0399	.00743					.0867	.0743	.156	.149	.110	.0966
.8	.0553	.0548	.0226	.0216	.0327	.0332	.00419					.0463	.0414	.105	.101	.0689	.0629
1.	.0498	.0493	.0219	.0203	.0278	.0290	.00268					.0295	.0270	.0815	.0788	.0513	.0473
1.5	.0404	.0401	.0200	.0187	.0204	.0214	.00122	.00208		.00208	.000624	.0141	.0133	.0575	.0563	.0362	.0327
2.	.0344	.0344	.0183	.0169	.0162	.0175	.000691	.00644		.00644	.00292	.0086	.00823	.0501	.0496	.0332	.0280
3.	.0270	.0270	.0156	.0138	.0114	.0133	.000307	.0137	.00000949	.0137	.00815	.00461	.00449	.0456	.0453	.0339	.0283
4.	.0226	.0226	.0138	.0115	.0089	.0111	.000173	.0193	.0000387	.0194	.0127	.00310	.00302	.0453	.0451	.0362	.0273
5.	.0196	.0196	.0123	.00991	.00729	.00964	.000112	.0239	.0000761	.0240	.0164	.00230	.00226	.0458	.0458	.0387	.0285
6.	.0173	.0173	.0111	.00862	.00615	.00865	.0000778	.0275	.000117	.0275	.0192	.00181	.00178	.0466	.0466	.0404	.0295
8.	.0141	.0141	.00944	.00684	.00471	.00731	.0000439	.0337	.000197	.0339	.0236	.00124	.00123	.0493	.0493	.0446	.0317
10.	.0120	.0120	.00823	.00572	.00382	.00632	.0000280	.0396	.000275	.0399	.0270	.000942	.000934	.0530	.0528	.0491	.0337
15.	.00892	.00892	.00632	.00414	.00258	.00478	.0000129	.0508	.000421	.0513	.0320	.000570	.000567	.0607	.0607	.0582	.0367
20.	.00716	.00716	.00520	.00310	.00196	.00406	.0000067	.0595	.000530	.0600	.0347	.000414	.000411	.0676	.0676	.0657	.0382
30.	.00520	.00520	.00389	.00197	.00132	.00322		.0709	.000686	.0716	.0367	.000265	.000265	.0771	.0771	.0758	.0389
40.	.00414	.00414	.00315	.00140	.000994	.00275		.0790	.000795	.0798	.0357	.000193	.000193	.0840	.0840	.0830	.0372
50.	.00344	.00344	.00265	.00106	.000795	.00239		.0847	.000882	.0857	.0352	.000151	.000150	.0895	.0895	.0885	.0364
60.	.00297	.00297	.00231	.000833	.000667	.00214		.0895	.000947	.0904	.0344	.000123	.000123	.0934	.0934	.0929	.0354
80.	.00235	.00235	.00185	.000567	.000501	.00178		.0961	.00105	.0971	.0330	.0000897	.0000897	.0996	.0996	.0991	.0337
100.	.00195	.00195	.00155	.000421	.000401	.00153		.101	.00113	.102	.0312	.0000696	.0000696	.104	.104	.104	.0317

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(barns/atom)

E (MeV)	KN. $\sigma_{inc,t}$	BD $\sigma_{inc,t}$	KN $\sigma_{inc,a}$	BD $\sigma_{inc,a}$	KN $\sigma_{inc,s}$	BD $\sigma_{inc,s}$	σ_{coh}	$\sigma_{n,n}$	$\sigma_{n,e}$	$\sigma_{n,t}$	$\sigma_{n,a}$	$\sigma_{\gamma,t}$	$\sigma_{\gamma,a}$	$\sigma_{tot,t}$	$\sigma_{tot,t-coh}$	$\sigma_{tot,a}$	$\sigma_{tot,en}$
.001	63.6	1.73	.124	.00337	63.5	1.73	5840.					---	---	---	---	---	---
.0015	63.5	2.88	.185	.00840	63.3	2.87	5600.					---	---	---	---	---	---
M_I .001689	63.4	3.32	.208	.0109	63.2	3.31	5500.					---	---	---	---	---	---
.002	63.4	4.03	.246	.0156	63.1	4.01	5340.					1280000.	1280000.	1290000.	1280000.	1280000.	1280000.
.003	63.1	6.24	.366	.0362	62.8	6.20	4800.					869000.	869000.	874000.	869000.	869000.	869000.
.004	62.9	8.29	.484	.0638	62.4	8.23	4300.					338000.	338000.	343000.	338000.	338000.	338000.
M_V .004012	62.9	8.32	.485	.0642	62.4	8.26	4290.					173000.	173000.	177000.	173000.	173000.	173000.
M_{IV} .004230	62.8	8.74	.511	.0711	62.3	8.67	4190.					173000.	173000.	177000.	173000.	173000.	173000.
M_{III} .004839	62.7	9.88	.581	.0917	62.1	9.79	3920.					542000.	542000.	546000.	542000.	542000.	542000.
.005	62.6	10.2	.600	.0977	62.0	10.1	3850.					487000.	487000.	491000.	487000.	487000.	487000.
M_{II} .005945	62.4	11.8	.708	.134	61.7	11.7	3480.					552000.	552000.	556000.	552000.	552000.	552000.
.006	62.4	11.9	.714	.136	61.7	11.8	3460.					365000.	365000.	369000.	365000.	365000.	365000.
M_I .006322	62.3	12.4	.751	.149	61.6	12.3	3350.					420000.	420000.	424000.	420000.	420000.	420000.
.008	61.9	14.9	.937	.226	61.0	14.7	2830.					390000.	390000.	394000.	390000.	390000.	390000.
.01	61.5	17.7	1.15	.332	60.3	17.4	2360.					264000.	264000.	267000.	264000.	264000.	264000.
.015	60.4	23.1	1.67	.639	58.7	22.5	1600.					314000.	314000.	317000.	314000.	314000.	314000.
L_{III} .018982	59.5	26.3	2.04	.903	57.5	25.4	1230.					305000.	305000.	308000.	305000.	305000.	305000.
.02	59.3	27.1	2.14	.978	57.2	26.1	1150.					262000.	262000.	265000.	262000.	262000.	262000.
L_{II} .023663	58.6	29.3	2.46	1.23	56.1	28.1	928.					291000.	291000.	294000.	291000.	291000.	291000.
L_I .024535	58.4	29.7	2.54	1.29	55.9	28.4	885.					155000.	155000.	158000.	155000.	155000.	155000.
.03	57.4	32.2	2.98	1.68	54.4	30.5	671.					86000.	86000.	88400.	86000.	86000.	86000.
.04	55.5	35.3	3.71	2.35	51.8	32.9	445.					28400.	28400.	30000.	28400.	28400.	28400.
.05	53.9	37.3	4.35	3.01	49.6	34.3	318.					15100.	15100.	16400.	15100.	15100.	15100.
.06	52.4	38.4	4.91	3.60	47.5	34.8	238.					35100.	24900.	36400.	35100.	35100.	24900.
.08	49.7	39.3	5.81	4.60	43.8	34.7	145.					31000.	22400.	32200.	31000.	31000.	22400.
.1	47.3	39.3	6.53	5.42	40.8	33.9	96.7					20800.	15900.	21800.	20800.	20800.	15900.
K .128253	44.5	39.2	7.29	6.42	37.2	32.8	61.3					28800.	21400.	29800.	28800.	28800.	21400.
.15	42.6	38.5	7.73	6.99	34.9	31.5	45.8					26000.	19600.	26900.	26000.	26000.	19600.
.2	39.0	36.5	8.44	7.89	30.6	28.6	26.5					30400.	22700.	31300.	30400.	30400.	22700.
.3	33.9	32.7	9.15	8.82	24.8	23.9	12.1					17900.	14200.	18600.	17900.	17900.	14200.
.4	30.4	29.6	9.42	9.00	21.0	20.6	6.84					8550.	7230.	9030.	8590.	8560.	7230.
.5	27.8	27.3	9.47	9.15	18.3	18.2	4.43					4770.	4180.	5130.	4810.	4770.	4180.
.6	25.7	25.3	9.44	9.08	16.2	16.2	3.08					2950.	2650.	3230.	2990.	2950.	2650.
.8	22.6	22.4	9.22	8.85	13.3	13.6	1.73					1370.	1260.	1550.	1410.	1380.	1260.
1.	20.3	20.1	8.92	8.24	11.4	11.9	1.11					748.	702.	884.	787.	755.	707.
1.5	16.5	16.4	8.15	7.63	8.32	8.77	.506	.865		.865	.259	369.	351.	469.	408.	376.	357.
2.	14.0	14.0	7.46	6.87	6.59	7.13	.286	2.68		2.68	1.21	1610.	513.	1710.	1650.	1620.	519.
3.	11.8	11.0	6.37	5.60	4.67	5.40	.127	5.68	.00387	5.68	3.38	1080.	451.	1160.	1120.	1090.	458.
4.	9.24	9.24	5.60	4.70	3.63	4.54	.0716	7.94	.0158	7.96	5.20	521.	293.	584.	558.	529.	301.
5.	7.98	7.98	5.01	4.04	2.97	3.94	.0465	9.83	.0311	9.86	6.73	186.	132.	231.	219.	195.	141.
6.	7.05	7.05	4.54	3.51	2.51	3.54	.0323	11.3	.0479	11.3	7.86	93.0	72.7	129.	123.	102.	81.7
8.	5.77	5.77	3.85	2.78	1.92	2.99	.0182	13.8	.0803	13.9	9.65	55.4	45.7	87.1	82.7	64.9	54.8
10.	4.91	4.91	3.36	2.33	1.55	2.58	.0116	16.3	.112	16.4	11.1	36.7	31.4	65.1	62.0	46.1	40.5
15.	3.63	3.63	2.58	1.68	1.05	1.95	.00534	20.9	.172	21.1	13.1	19.6	17.5	43.7	42.0	28.8	26.4
20.	2.92	2.92	2.12	1.26	.798	1.66	.00279	24.4	.216	24.6	14.2	12.5	11.4	33.7	32.6	21.4	19.6
30.	2.12	2.12	1.59	.801	.537	1.32		29.1	.279	29.4	15.0	5.97	5.62	23.7	23.2	15.0	13.5
40.	1.69	1.69	1.28	.570	.405	1.12		32.4	.324	32.7	14.6	3.63	3.47	20.6	20.3	13.8	11.5
50.	1.41	1.41	1.08	.433	.324	.977		34.8	.360	35.2	14.3	1.95	1.89	18.8	18.6	14.0	10.9
60.	1.21	1.21	.942	.338	.272	.872		36.7	.386	37.1	14.1	1.31	1.28	18.6	18.5	14.9	11.2
80.	.957	.957	.753	.232	.204	.725		39.5	.427	39.9	13.5	.967	.950	18.9	18.8	15.8	11.7
100.	.795	.795	.631	.172	.164	.623		41.5	.458	42.0	12.8	.763	.752	19.1	19.1	16.6	12.1
												.525	.519	20.2	20.2	18.3	12.9
												.395	.392	21.7	21.7	20.2	13.8
												.240	.239	25.0	25.0	23.9	15.0
												.175	.174	27.7	27.7	26.9	15.6
												.112	.112	31.6	31.6	31.1	15.9
												.0811	.0809	34.5	34.5	34.1	15.3
												.0634	.0633	36.7	36.7	36.3	14.8
												.0518	.0517	38.4	38.4	38.1	14.5
												.0378	.0378	40.9	40.9	40.7	13.8
												.0295	.0295	42.8	42.8	42.7	13.0

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(cm²/g = 0.002438 x barns/atom)

E (MeV)	$(\frac{\mu}{\rho})^{KN}_{inc,t}$	$(\frac{\mu}{\rho})^{BD}_{inc,t}$	$(\frac{\mu}{\rho})^{KN}_{inc,a}$	$(\frac{\mu}{\rho})^{BD}_{inc,a}$	$(\frac{\mu}{\rho})^{KN}_{inc,s}$	$(\frac{\mu}{\rho})^{BD}_{inc,s}$	$(\frac{\mu}{\rho})_{coh}$	$(\frac{\mu}{\rho})_{x_n}$	$(\frac{\mu}{\rho})_{x_e}$	$(\frac{\mu}{\rho})_{x,t}$	$(\frac{\mu}{\rho})_{x,a}$	$(\frac{\mu}{\rho})_{\gamma,t}$	$(\frac{\mu}{\rho})_{\gamma,a}$	$(\frac{\mu}{\rho})_{tot,t}$	$(\frac{\mu}{\rho})_{tot,t-coh}$	$(\frac{\mu}{\rho})_{tot,a}$	$(\frac{\mu}{\rho})_{tot,en}$
.001	.155	.00422	.000302	.0000082	.155	.00422	14.2					---	---	---	---	---	---
.0015	.155	.00702	.000451	.0000205	.154	.00700	13.7					---	---	---	---	---	---
N_I .001689	.155	.00809	.000507	.0000266	.154	.00807	13.4					---	---	---	---	---	---
.002	.155	.00983	.000600	.0000380	.154	.00978	13.0					3120.	3120.	3150.	3120.	3120.	3120.
.003	.154	.0152	.000892	.0000883	.153	.0151	11.7					2120.	2120.	2130.	2120.	2120.	2120.
.004	.153	.0202	.00118	.000156	.152	.0201	10.5					824.	824.	836.	824.	824.	824.
N_V .004012	.153	.0203	.00118	.000157	.152	.0201	10.5					422.	422.	432.	422.	422.	422.
N_{IV} .004230	.153	.0213	.00125	.000173	.152	.0211	10.2					422.	422.	432.	422.	422.	422.
												1320.	1320.	1330.	1320.	1320.	1320.
N_{III} .004839	.153	.0241	.00142	.000224	.151	.0239	9.56					1190.	1190.	1200.	1190.	1190.	1190.
												1350.	1350.	1360.	1350.	1350.	1350.
.005	.153	.0249	.00146	.000238	.151	.0246	9.39					890.	890.	900.	890.	890.	890.
N_{II} .005945	.152	.0288	.00173	.000327	.150	.0285	8.48					1020.	1020.	1030.	1020.	1020.	1020.
												951.	951.	961.	951.	951.	951.
.006	.152	.0290	.00174	.000332	.150	.0288	8.44					644.	644.	651.	644.	644.	644.
N_I .006322	.152	.0302	.00183	.000363	.150	.0300	8.17					766.	766.	773.	766.	766.	766.
												744.	744.	751.	744.	744.	744.
.008	.151	.0363	.00228	.000551	.149	.0358	6.90					639.	639.	646.	639.	639.	639.
.01	.150	.0432	.00280	.000809	.147	.0424	5.75					709.	709.	717.	709.	709.	709.
.015	.147	.0563	.00407	.00156	.143	.0549	3.90					378.	378.	385.	378.	378.	378.
L_{III} .018982	.145	.0641	.00497	.00220	.140	.0619	3.00					210.	210.	216.	210.	210.	210.
												69.2	69.2	73.1	69.2	69.2	69.2
.02	.145	.0661	.00522	.00238	.139	.0636	2.80					36.8	36.8	40.0	36.8	36.8	36.8
L_{II} .023663	.143	.0714	.00600	.00300	.137	.0685	2.26					85.6	60.7	88.7	85.6	85.6	60.7
												75.6	54.6	78.5	75.6	75.6	54.6
L_I .024535	.142	.0724	.00619	.00315	.136	.0692	2.16					50.7	38.8	53.1	50.7	50.7	38.8
												70.2	52.2	72.7	70.2	70.2	52.2
.03	.140	.0785	.00727	.00410	.133	.0744	1.64					63.4	47.8	65.6	63.4	63.4	47.8
.04	.135	.0861	.00904	.00573	.126	.0802	1.08					74.1	55.3	76.3	74.1	74.1	55.3
.05	.131	.0909	.0106	.00734	.121	.0836	.775					43.6	34.6	45.3	43.6	43.6	34.6
.06	.128	.0936	.0120	.00878	.116	.0848	.580					20.8	17.6	22.0	20.9	20.8	17.6
.08	.121	.0958	.0142	.0112	.107	.0846	.354					11.6	10.2	12.5	11.7	11.6	10.2
.1	.115	.0958	.0159	.0132	.0995	.0826	.236					7.19	6.46	7.87	7.29	7.19	6.46
K .128253	.108	.0956	.0178	.0157	.0907	.0800	.149					3.34	3.07	3.78	3.44	3.36	3.07
												1.82	1.71	2.16	1.92	1.84	1.72
.15	.104	.0939	.0188	.0170	.0851	.0768	.112					.900	.856	1.14	.995	.917	.870
.2	.0951	.0890	.0206	.0192	.0746	.0697	.0646					3.93	1.25	4.17	4.02	3.95	1.27
.3	.0826	.0797	.0223	.0215	.0605	.0583	.0295					2.63	1.10	2.83	2.73	2.66	1.12
.4	.0741	.0722	.0230	.0219	.0512	.0502	.0167					1.27	.714	1.42	1.36	1.29	.734
.5	.0678	.0666	.0231	.0223	.0446	.0444	.0108					.453	.322	.563	.534	.475	.344
.6	.0627	.0617	.0230	.0221	.0395	.0395	.00751					.227	.177	.315	.300	.249	.199
.8	.0551	.0546	.0225	.0216	.0324	.0332	.00422					.135	.111	.212	.202	.158	.134
1.	.0495	.0490	.0217	.0201	.0278	.0290	.00271					.0895	.0766	.159	.151	.112	.0987
1.5	.0402	.0400	.0199	.0186	.0203	.0214	.00123	.00211		.00211	.000631	.0478	.0427	.107	.102	.0702	.0664
2.	.0341	.0341	.0182	.0167	.0161	.0174	.000697	.00653		.00653	.00295	.0305	.0278	.0822	.0795	.0522	.0478
3.	.0268	.0268	.0155	.0137	.0114	.0132	.000310	.0138	.00000944	.0138	.00824	.0146	.0137	.0578	.0566	.0366	.0329
4.	.0225	.0225	.0137	.0115	.00885	.0111	.000175	.0194	.0000385	.0194	.0127	.00885	.00846	.0502	.0495	.0336	.0280
5.	.0195	.0195	.0122	.00985	.00724	.00961	.000113	.0240	.0000758	.0240	.0164	.00675	.00661	.0458	.0453	.0341	.0266
6.	.0172	.0172	.0111	.00856	.00612	.00863	.0000787	.0275	.000117	.0275	.0192	.00319	.00312	.0453	.0451	.0363	.0273
8.	.0141	.0141	.00939	.00678	.00468	.00729	.0000444	.0336	.000196	.0339	.0235	.00236	.00232	.0461	.0458	.0385	.0286
10.	.0120	.0120	.00819	.00568	.00378	.00629	.0000283	.0397	.000273	.0400	.0271	.00186	.00183	.0466	.0466	.0405	.0295
15.	.00885	.00885	.00629	.00410	.00256	.00475	.0000130	.0510	.000419	.0514	.0319	.00128	.00127	.0492	.0492	.0446	.0315
20.	.00712	.00712	.00517	.00307	.00195	.00405	.0000068	.0595	.000527	.0600	.0346	.000963	.000956	.0529	.0529	.0492	.0336
30.	.00517	.00517	.00388	.00195	.00131	.00322		.0709	.000680	.0717	.0366	.000585	.000583	.0609	.0609	.0583	.0366
40.	.00412	.00412	.00312	.00139	.000987	.00273		.0790	.000790	.0797	.0356	.000427	.000424	.0675	.0675	.0656	.0380
50.	.00344	.00344	.00263	.00106	.000790	.00238		.0848	.000878	.0858	.0349	.000273	.000273	.0770	.0770	.0758	.0388
60.	.00295	.00295	.00230	.000824	.000663	.00213		.0895	.000941	.0904	.0344	.000198	.000197	.0841	.0841	.0831	.0373
80.	.00233	.00233	.00184	.000566	.000497	.00177		.0963	.00104	.0973	.0329	.000155	.000154	.0895	.0895	.0885	.0361
100.	.00194	.00194	.00154	.000419	.000400	.00152		.101	.00112	.102	.0312	.000126	.000126	.0936	.0936	.0929	.0354
												.0000922	.0000922	.0997	.0997	.0992	.0336
												.0000719	.0000719	.104	.104	.104	.0317

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(barns/atom)

E (MeV)	KN $\sigma_{inc,t}$	BD $\sigma_{inc,t}$	KN $\sigma_{inc,a}$	BD $\sigma_{inc,a}$	KN $\sigma_{inc,s}$	BD $\sigma_{inc,s}$	σ_{coh}	$\sigma_{\gamma n}$	$\sigma_{\gamma e}$	$\sigma_{\gamma,t}$	$\sigma_{\gamma,a}$	$\sigma_{\gamma,t}$	$\sigma_{\gamma,a}$	$\sigma_{tot,t}$	$\sigma_{tot,t-coh}$	$\sigma_{tot,a}$	$\sigma_{tot,en}$
.001	64.3	1.72	.125	.00335	64.1	1.72	5970.					---	---	---	---	---	---
.0015	64.1	2.86	.187	.00834	64.0	2.85	5730.					---	---	---	---	---	---
N_I .001755	64.1	3.45	.218	.0118	63.9	3.44	5590.					---	---	---	---	---	---
.002	64.0	4.01	.248	.0156	63.8	3.99	5460.					1220000.	1220000.	1230000.	1220000.	1220000.	1220000.
.003	63.8	6.23	.370	.0361	63.4	6.19	4920.					903000.	903000.	908000.	903000.	903000.	903000.
.004	63.5	8.29	.489	.0638	63.0	8.23	4410.					350000.	350000.	355000.	350000.	350000.	350000.
N_{IV} .004132	63.5	8.55	.504	.0679	63.0	8.48	4340.					180000.	180000.	184000.	180000.	180000.	180000.
N_{IV} .004364	63.4	8.99	.532	.0754	62.9	8.91	4230.					168000.	168000.	172000.	168000.	168000.	168000.
N_{III} .004977	63.3	10.1	.604	.0963	62.7	10.0	3950.					524000.	524000.	528000.	524000.	524000.	524000.
.005	63.3	10.2	.606	.0977	62.7	10.1	3940.					470000.	470000.	474000.	470000.	470000.	470000.
.006	63.0	11.9	.722	.136	62.3	11.8	3540.					533000.	533000.	537000.	533000.	533000.	533000.
N_{II} .006147	63.0	12.1	.739	.142	62.3	12.0	3490.					354000.	354000.	358000.	354000.	354000.	354000.
N_I .006526	62.9	12.8	.782	.159	62.1	12.6	3360.					407000.	407000.	411000.	407000.	407000.	407000.
.008	62.6	15.0	.947	.227	61.6	14.8	2900.					403000.	403000.	407000.	403000.	403000.	403000.
.01	62.1	17.7	1.16	.332	61.0	17.4	2420.					268000.	268000.	272000.	268000.	268000.	268000.
.015	61.0	23.2	1.69	.642	59.3	22.6	1640.					254000.	254000.	258000.	254000.	254000.	254000.
L_{III} .019452	60.1	26.9	2.11	.945	57.9	26.0	1220.					302000.	302000.	306000.	302000.	302000.	302000.
.02	59.9	27.2	2.16	.982	57.8	26.2	1180.					253000.	253000.	256000.	253000.	253000.	253000.
L_{II} .024385	59.0	29.9	2.55	1.29	56.5	28.6	915.					280000.	280000.	283000.	280000.	280000.	280000.
L_I .025275	58.9	30.3	2.63	1.35	56.2	28.9	872.					162000.	162000.	165000.	162000.	162000.	162000.
.03	57.9	32.4	3.02	1.69	55.0	30.7	688.					89600.	89600.	92000.	89600.	89600.	89600.
.04	56.1	35.6	3.74	2.37	52.4	33.2	457.					29700.	29700.	31400.	29700.	29700.	29700.
.05	54.5	37.6	4.39	3.03	50.1	34.6	327.					14800.	14800.	16000.	14800.	14800.	14800.
.06	52.9	38.7	4.97	3.63	48.0	35.1	244.					24300.	24300.	35300.	34100.	34100.	24300.
.08	50.2	39.6	5.88	4.64	44.3	35.0	149.					22900.	22900.	33000.	31800.	31800.	22900.
.1	47.8	39.7	6.60	5.48	41.2	34.2	99.2					15400.	15400.	20900.	20000.	20000.	15400.
K .131590	44.6	39.5	7.44	6.58	37.2	32.9	60.1					20700.	20700.	28600.	27700.	27700.	20700.
.15	43.0	38.9	7.81	7.06	35.2	31.8	47.0					18900.	18900.	25900.	25000.	25000.	18900.
.2	39.4	36.8	8.52	7.96	30.9	28.8	27.3					21900.	21900.	30100.	29200.	29200.	21900.
.3	34.3	33.0	9.24	8.90	25.0	24.1	12.4					14700.	14700.	19300.	18600.	18600.	14700.
.4	30.7	29.9	9.52	9.09	21.2	20.8	7.03					7510.	7510.	9400.	8950.	8910.	7510.
.5	28.0	27.5	9.57	9.21	18.5	18.3	4.55					4340.	4340.	5330.	5010.	4970.	4340.
.6	25.9	25.6	9.53	9.19	16.4	16.4	3.16					2760.	2760.	3360.	3120.	3080.	2760.
.8	22.8	22.6	9.32	8.93	13.5	13.7	1.78					1320.	1320.	1620.	1470.	1440.	1320.
1.	20.5	20.4	9.01	8.36	11.5	12.0	1.14					736.	736.	925.	826.	793.	741.
1.5	16.6	16.6	8.23	7.72	8.41	8.88	.520	.898		.890	.267	343.	343.	460.	399.	367.	350.
2.	14.2	14.2	7.53	6.97	6.66	7.23	.294	2.75		2.75	1.25	496.	496.	1660.	1600.	1570.	503.
3.	11.2	11.1	6.44	5.64	4.72	5.46	.130	5.80	.00391	5.80	3.45	450.	450.	1210.	1160.	1130.	457.
4.	9.33	9.33	5.66	4.74	3.67	4.59	.0735	8.12	.0160	8.14	5.31	298.	298.	604.	577.	549.	306.
5.	8.06	8.06	5.06	4.07	3.00	3.99	.0478	10.0	.0313	10.0	6.83	136.	136.	239.	227.	203.	145.
6.	7.12	7.12	4.59	3.54	2.54	3.58	.0332	11.5	.0483	11.5	7.99	75.2	75.2	134.	127.	107.	84.3
8.	5.83	5.83	3.89	2.80	1.94	3.03	.0187	14.2	.0811	14.3	9.91	47.4	47.4	89.8	85.3	67.4	56.6
10.	4.96	4.96	3.39	2.35	1.57	2.61	.0119	16.6	.113	16.7	11.3	32.6	32.6	67.1	63.9	47.8	41.8
15.	3.67	3.67	2.61	1.70	1.07	1.97	.00547	21.3	.174	21.5	13.4	18.2	18.2	44.9	43.1	29.8	27.1
20.	2.95	2.95	2.14	1.27	.806	1.68	.00288	24.9	.218	25.1	14.4	11.9	11.9	34.6	33.5	22.1	20.3
30.	2.15	2.15	1.60	.811	.542	1.34		29.6	.282	29.9	15.2	6.89	6.89	24.3	23.7	15.4	13.9
40.	1.71	1.71	1.30	.575	.409	1.14		33.0	.327	33.3	14.8	3.63	3.63	21.0	20.7	14.1	11.8
50.	1.42	1.42	1.10	.435	.328	.985		35.5	.364	35.9	14.6	1.98	1.98	19.1	18.9	14.3	11.1
60.	1.23	1.23	.952	.342	.274	.888		37.4	.389	37.8	14.2	1.34	1.34	18.9	18.8	15.2	11.4
80.	.967	.967	.761	.233	.207	.734		40.2	.430	40.6	13.7	.992	.992	19.1	19.1	16.1	11.9
100.	.803	.803	.638	.173	.166	.630		42.2	.462	42.7	12.9	.783	.783	19.4	19.4	16.9	12.3
												.541	.541	20.7	20.7	18.7	13.3
												.407	.407	22.1	22.1	20.5	14.1
												.249	.249	25.4	25.4	24.6	15.3
												.180	.180	28.2	28.2	27.4	15.8
												.116	.116	32.2	32.2	31.6	16.1
												.0843	.0843	35.1	35.1	34.7	15.5
												.0660	.0660	37.4	37.4	37.1	15.1
												.0539	.0539	39.1	39.1	38.8	14.6
												.0394	.0394	41.6	41.6	41.4	14.0
												.0307	.0307	43.5	43.5	43.4	13.1

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(cm^2/g = 0.002419 x barns/atom)

E (MeV)	$(\frac{\mu}{\rho})^{KN}_{inc,t}$	$(\frac{\mu}{\rho})^{BD}_{inc,t}$	$(\frac{\mu}{\rho})^{KN}_{inc,a}$	$(\frac{\mu}{\rho})^{BD}_{inc,a}$	$(\frac{\mu}{\rho})^{KN}_{inc,s}$	$(\frac{\mu}{\rho})^{BD}_{inc,s}$	$(\frac{\mu}{\rho})_{coh}$	$(\frac{\mu}{\rho})_{\pi n}$	$(\frac{\mu}{\rho})_{\pi e}$	$(\frac{\mu}{\rho})_{\pi,t}$	$(\frac{\mu}{\rho})_{\pi,a}$	$(\frac{\mu}{\rho})_{r,t}$	$(\frac{\mu}{\rho})_{r,a}$	$(\frac{\mu}{\rho})_{tot,t}$	$(\frac{\mu}{\rho})_{tot,t-coh}$	$(\frac{\mu}{\rho})_{tot,a}$	$(\frac{\mu}{\rho})_{tot,en}$
.001	.156	.00416	.000302	.0000081	.155	.00416	14.4					---	---	---	---	---	---
.0015	.155	.00692	.000452	.0000202	.155	.00689	13.9					---	---	---	---	---	---
M_I .001755	.155	.00835	.000527	.0000285	.155	.00832	13.5					---	---	---	---	---	---
.002	.155	.00970	.000600	.0000377	.154	.00965	13.2					2950.	2950.	2980.	2950.	2950.	2950.
.003	.154	.0151	.000895	.0000873	.153	.0150	11.9					2180.	2180.	2200.	2180.	2180.	2180.
.004	.154	.0201	.00118	.000154	.152	.0199	10.7					847.	847.	859.	847.	847.	847.
M_V .004132	.154	.0207	.00122	.000164	.152	.0205	10.5					435.	435.	445.	435.	435.	435.
M_{IV} .004364	.153	.0217	.00129	.000182	.152	.0216	10.2					406.	406.	416.	406.	406.	406.
M_{III} .004977	.153	.0244	.00146	.000233	.152	.0242	9.56					1270.	1270.	1280.	1270.	1270.	1270.
.005	.153	.0247	.00147	.000236	.152	.0244	9.53					1140.	1140.	1150.	1140.	1140.	1140.
.006	.152	.0288	.00175	.000329	.151	.0285	8.56					1290.	1290.	1300.	1290.	1290.	1290.
M_{II} .006147	.152	.0293	.00179	.000343	.151	.0290	8.44					856.	856.	866.	856.	856.	856.
M_I .006526	.152	.0310	.00189	.000385	.150	.0305	8.13					985.	985.	994.	985.	985.	985.
.008	.151	.0363	.00229	.000549	.149	.0358	7.02					975.	975.	985.	975.	975.	975.
.01	.150	.0428	.00281	.000803	.148	.0421	5.85					648.	648.	658.	648.	648.	648.
.015	.148	.0561	.00409	.00155	.143	.0547	3.97					614.	614.	624.	614.	614.	614.
L_{III} .019652	.145	.0651	.00510	.00229	.140	.0629	2.95					731.	731.	740.	731.	731.	731.
.02	.145	.0658	.00523	.00238	.140	.0634	2.85					612.	612.	619.	612.	612.	612.
L_{II} .024385	.143	.0723	.00617	.00312	.137	.0692	2.21					677.	677.	685.	677.	677.	677.
L_I .025275	.142	.0733	.00636	.00327	.136	.0699	2.11					392.	392.	399.	392.	392.	392.
.03	.140	.0784	.00731	.00409	.133	.0743	1.66					217.	217.	223.	217.	217.	217.
.04	.136	.0861	.00905	.00573	.127	.0803	1.11					71.8	71.8	76.0	71.8	71.8	71.8
.05	.132	.0910	.0106	.00733	.121	.0837	.791					35.8	35.8	38.7	35.8	35.8	35.8
.06	.128	.0936	.0120	.00878	.116	.0849	.590					82.5	58.8	85.4	82.5	82.5	58.8
.08	.121	.0958	.0142	.0112	.107	.0847	.360					76.9	55.4	79.8	76.9	76.9	55.4
.1	.116	.0960	.0160	.0133	.0997	.0827	.240					48.4	37.3	50.6	48.4	48.4	37.3
K .13159	.108	.0956	.0180	.0159	.0900	.0796	.145					67.0	50.1	69.2	67.0	67.0	50.1
.15	.104	.0941	.0189	.0171	.0851	.0769	.114					60.5	45.7	62.7	60.5	60.5	45.7
.2	.0953	.0890	.0206	.0193	.0747	.0697	.0660					70.6	53.0	72.8	70.6	70.6	53.0
.3	.0830	.0798	.0224	.0215	.0605	.0583	.0300					45.0	35.6	46.7	45.0	45.0	35.6
.4	.0743	.0723	.0230	.0220	.0513	.0503	.0170					21.6	18.2	22.7	21.7	21.6	18.2
.5	.0677	.0665	.0231	.0223	.0448	.0443	.0110					12.0	10.5	12.9	12.1	12.0	10.5
.6	.0627	.0619	.0231	.0222	.0397	.0397	.00764					7.45	6.68	8.13	7.55	7.45	6.68
.8	.0552	.0547	.0225	.0216	.0327	.0331	.00431					3.46	3.19	3.92	3.56	3.48	3.19
1.	.0496	.0493	.0218	.0202	.0278	.0290	.00276					1.90	1.78	2.24	2.08	1.92	1.79
1.5	.0402	.0402	.0199	.0187	.0203	.0215	.00126	.00215		.00215	.000646	.871	.830	1.11	.965	.888	.847
2.	.0343	.0343	.0182	.0169	.0161	.0175	.000711	.00665		.00665	.00302	3.77	1.20	4.02	3.87	3.80	1.22
3.	.0271	.0269	.0156	.0136	.0114	.0132	.000314	.0140	.00000946	.0140	.00835	2.71	1.09	2.93	2.81	2.73	1.11
4.	.0226	.0226	.0137	.0115	.00888	.0111	.000178	.0196	.0000387	.0197	.0128	1.31	.721	1.46	1.40	1.33	.740
5.	.0195	.0195	.0122	.00985	.00726	.00965	.000116	.0242	.0000757	.0242	.0165	.469	.329	.578	.549	.491	.351
6.	.0172	.0172	.0111	.00856	.00614	.00866	.0000803	.0278	.000117	.0278	.0193	.235	.182	.324	.307	.259	.204
8.	.0141	.0141	.00941	.00677	.00469	.00733	.0000452	.0343	.000196	.0346	.0240	.140	.115	.217	.206	.163	.137
10.	.0120	.0120	.00820	.00568	.00380	.00631	.0000288	.0402	.000273	.0404	.0273	.0926	.0789	.162	.155	.116	.101
15.	.00888	.00888	.00631	.00411	.00259	.00477	.0000132	.0515	.000421	.0520	.0324	.0496	.0440	.109	.104	.0721	.0656
20.	.00714	.00714	.00518	.00307	.00195	.00406	.0000070	.0602	.000527	.0607	.0348	.0317	.0288	.0837	.0810	.0535	.0491
30.	.00520	.00520	.00387	.00196	.00131	.00324		.0716	.000682	.0723	.0368	.0151	.0142	.0588	.0573	.0373	.0336
40.	.00414	.00414	.00314	.00139	.000989	.00276		.0798	.000791	.0806	.0358	.00919	.00878	.0508	.0501	.0341	.0285
50.	.00343	.00343	.00266	.00105	.000793	.00238		.0859	.000881	.0868	.0353	.00493	.00479	.0462	.0457	.0346	.0269
60.	.00298	.00298	.00230	.000827	.000663	.00215		.0905	.000941	.0914	.0343	.00331	.00324	.0457	.0455	.0368	.0276
80.	.00234	.00234	.00184	.000564	.000501	.00178		.0972	.00104	.0982	.0331	.00244	.00240	.0462	.0462	.0389	.0288
100.	.00194	.00194	.00154	.000418	.000402	.00152		.102	.00112	.103	.0312	.00192	.00189	.0469	.0469	.0409	.0298
												.00132	.00131	.0501	.0501	.0452	.0322
												.000994	.000985	.0535	.0535	.0496	.0341
												.000805	.000802	.0614	.0614	.0590	.0370
												.000438	.000435	.0682	.0682	.0663	.0382
												.000281	.000281	.0779	.0779	.0764	.0389
												.000204	.000204	.0849	.0849	.0839	.0375
												.000160	.000160	.0905	.0905	.0897	.0365
												.000131	.000130	.0946	.0946	.0939	.0353
												.0000953	.0000953	.101	.101	.100	.0339
												.0000743	.0000743	.105	.105	.105	.0317

98 CALIFORNIUM
(barns/atom)

E (MeV)	KN $\sigma_{inc,t}$	BD $\sigma_{inc,t}$	KN $\sigma_{inc,a}$	BD $\sigma_{inc,a}$	KN $\sigma_{inc,s}$	BD $\sigma_{inc,s}$	σ_{coh}	$\sigma_{\gamma,\gamma}$	$\sigma_{\gamma e}$	$\sigma_{\gamma,t}$	$\sigma_{\gamma,a}$	$\sigma_{\gamma,t}$	$\sigma_{\gamma,a}$	$\sigma_{tot,t}$	$\sigma_{tot,t-coh}$	$\sigma_{tot,a}$	$\sigma_{tot,en}$
.001	64.9	1.71	.127	.00333	64.8	1.71	6100.					---	---	---	---	---	---
.0015	64.8	2.85	.189	.00831	64.6	2.84	5860.					---	---	---	---	---	---
M_I .001822	64.7	3.58	.229	.0127	64.5	3.57	5690.					---	---	---	---	---	---
.002	64.7	3.99	.251	.0155	64.4	3.97	5590.					1160000.	1160000.	1170000.	1160000.	1160000.	1160000.
.003	64.4	6.21	.373	.0360	64.1	6.17	5040.					936000.	936000.	942000.	936000.	936000.	936000.
.004	64.2	8.28	.494	.0637	63.7	8.22	4520.					363000.	363000.	364000.	363000.	363000.	363000.
M_{IV} .004254	64.1	8.78	.524	.0718	63.6	8.71	4390.					185000.	185000.	190000.	185000.	185000.	185000.
M_{IV} .004502	64.1	9.25	.554	.0799	63.5	9.17	4270.					162000.	162000.	166000.	162000.	162000.	162000.
.005	63.9	10.2	.612	.0977	63.3	10.1	4040.					508000.	508000.	512000.	508000.	508000.	508000.
M_{III} .005117	63.9	10.4	.626	.102	63.3	10.3	3990.					454000.	454000.	458000.	454000.	454000.	454000.
.006	63.7	11.9	.729	.136	63.0	11.8	3630.					514000.	514000.	518000.	514000.	514000.	514000.
M_{II} .006353	63.6	12.5	.770	.151	62.8	12.3	3500.					369000.	369000.	373000.	369000.	369000.	369000.
M_I .006735	63.5	13.1	.814	.168	62.7	12.9	3370.					344000.	344000.	348000.	344000.	344000.	344000.
.008	63.2	15.0	.957	.227	62.3	14.8	2970.					395000.	395000.	399000.	395000.	395000.	395000.
.01	62.8	17.8	1.18	.334	61.6	17.5	2670.					277000.	277000.	281000.	277000.	277000.	277000.
.015	61.6	23.3	1.70	.644	59.9	22.7	1670.					244000.	244000.	248000.	244000.	244000.	244000.
L_{III} .019929	60.6	27.4	2.18	.984	58.4	26.4	1210.					291000.	291000.	295000.	291000.	291000.	291000.
.02	60.6	27.4	2.18	.989	58.4	26.4	1210.					244000.	244000.	247000.	244000.	244000.	244000.
L_{II} .025125	59.5	30.5	2.64	1.35	56.9	29.1	902.					270000.	270000.	273000.	270000.	270000.	270000.
L_I .026030	59.3	30.9	2.72	1.42	56.6	29.5	860.					169000.	169000.	172000.	169000.	169000.	169000.
.03	58.5	32.7	3.05	1.70	55.5	31.0	706.					93300.	93300.	95800.	93300.	93300.	93300.
.04	56.7	35.9	3.78	2.39	52.9	33.5	468.					31100.	31100.	32800.	31100.	31100.	31100.
.05	55.0	37.9	4.44	3.06	50.6	34.8	335.					14500.	14500.	15700.	14500.	14500.	14500.
.06	53.5	39.1	5.02	3.67	48.5	35.4	251.					33100.	23600.	34300.	33100.	33100.	23600.
.08	50.7	40.0	5.94	4.68	44.8	35.3	153.					32700.	23400.	33900.	32700.	32700.	23400.
.1	48.3	40.1	6.66	5.53	41.6	34.6	102.					19300.	14900.	20200.	19300.	19300.	14900.
K .135005	44.8	39.8	7.59	6.75	37.2	33.0	58.8					26600.	19900.	27500.	26600.	26600.	19900.
.15	43.5	39.2	7.89	7.11	35.6	32.1	48.3					24100.	18300.	25000.	24100.	24100.	18300.
.2	39.8	37.2	8.61	8.04	31.2	29.2	28.0					28200.	21200.	29100.	28200.	28200.	21200.
.3	34.6	33.3	9.34	8.98	25.3	24.3	12.7					19400.	15200.	20100.	19400.	19400.	15200.
.4	31.0	30.3	9.61	9.21	21.4	21.1	7.22					9270.	7780.	9770.	9310.	9270.	7780.
.5	28.3	27.8	9.66	9.31	18.7	18.5	4.67					5180.	4510.	5550.	5220.	5180.	4510.
.6	26.2	25.9	9.63	9.30	16.6	16.6	3.24					3210.	2870.	3500.	3250.	3220.	2870.
.8	23.0	22.8	9.41	9.01	13.6	13.8	1.83					1500.	1380.	1690.	1540.	1510.	1380.
1.	20.7	20.6	9.10	8.45	11.6	12.2	1.18					827.	774.	969.	867.	836.	780.
1.5	16.8	16.7	8.32	7.75	8.50	8.95	.532	.920		.920	.276	351.	334.	450.	391.	359.	341.
2.	14.3	14.3	7.61	7.02	6.73	7.28	.301	2.83		2.83	1.28	1510.	481.	1610.	1550.	1520.	488.
3.	11.3	11.3	6.51	5.74	4.77	5.56	.134	5.95	.00395	5.95	3.54	1160.	449.	1250.	1200.	1170.	456.
4.	9.43	9.43	5.72	4.78	3.71	4.65	.0755	8.26	.0161	8.28	5.40	560.	302.	625.	597.	569.	310.
5.	8.14	8.14	5.11	4.10	3.03	4.04	.0491	10.2	.0317	10.2	6.96	201.	139.	247.	234.	210.	148.
6.	7.20	7.20	4.63	3.57	2.56	3.63	.0341	11.7	.0488	11.7	8.12	101.	77.8	139.	131.	111.	87.0
8.	5.89	5.89	3.93	2.82	1.96	3.07	.0192	14.4	.0820	14.5	10.0	60.0	49.0	92.5	87.8	69.7	58.3
10.	5.01	5.01	3.43	2.36	1.59	2.65	.0122	16.9	.114	17.0	11.5	40.1	34.0	69.2	66.0	49.7	43.3
15.	3.71	3.71	2.63	1.71	1.08	2.00	.0056	21.6	.176	21.8	13.5	21.5	19.0	46.1	44.3	30.9	28.0
20.	2.98	2.98	2.16	1.28	.814	1.70	.00297	25.3	.220	25.5	14.6	13.7	12.4	35.5	34.3	22.8	20.8
30.	2.17	2.17	1.62	.816	.548	1.35		30.1	.284	30.4	15.4	6.55	6.15	24.7	24.2	15.8	14.2
40.	1.72	1.72	1.31	.576	.414	1.14		33.5	.330	33.8	15.0	3.97	3.79	21.4	21.1	14.4	12.1
50.	1.44	1.44	1.11	.439	.331	1.00		36.1	.367	36.5	14.7	2.12	2.06	19.5	19.4	14.6	11.3
60.	1.24	1.24	.961	.345	.277	.895		38.1	.393	38.5	14.4	1.44	1.41	19.2	19.1	15.4	11.6
80.	.977	.977	.768	.234	.209	.743		40.9	.434	41.3	13.8	1.06	1.04	19.4	19.4	16.4	12.1
100.	.811	.811	.644	.174	.167	.637		43.0	.467	43.5	13.0	.832	.819	19.8	19.7	17.2	12.5
												.570	.563	21.0	21.0	19.0	13.4
												.430	.426	22.5	22.4	20.9	14.3
												.261	.259	25.8	25.8	24.7	15.5
												.190	.189	28.7	28.7	27.8	16.1
												.121	.121	32.7	32.7	32.1	16.3
												.0880	.0878	35.6	35.6	35.2	15.7
												.0689	.0688	38.0	38.0	37.7	15.2
												.0561	.0560	39.8	39.8	39.5	14.8
												.0409	.0409	42.3	42.3	42.1	14.1
												.0320	.0320	44.3	44.3	44.2	13.2

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(cm^2/g = 0.002399 x barns/atom)

E (MeV)	$(\frac{\mu}{\rho})^{KN}_{inc,t}$	$(\frac{\mu}{\rho})^{BD}_{inc,t}$	$(\frac{\mu}{\rho})^{KN}_{inc,a}$	$(\frac{\mu}{\rho})^{BD}_{inc,a}$	$(\frac{\mu}{\rho})^{KN}_{inc,s}$	$(\frac{\mu}{\rho})^{BD}_{inc,s}$	$(\frac{\mu}{\rho})_{coh}$	$(\frac{\mu}{\rho})_{x_n}$	$(\frac{\mu}{\rho})_{x_e}$	$(\frac{\mu}{\rho})_{x,t}$	$(\frac{\mu}{\rho})_{x,a}$	$(\frac{\mu}{\rho})_{r,t}$	$(\frac{\mu}{\rho})_{r,a}$	$(\frac{\mu}{\rho})_{tot,t}$	$(\frac{\mu}{\rho})_{tot,t-coh}$	$(\frac{\mu}{\rho})_{tot,a}$	$(\frac{\mu}{\rho})_{tot,en}$
.001	.156	.00410	.000305	.0000080	.155	.00410	14.6					---	---	---	---	---	---
.0015	.155	.00684	.000453	.0000199	.155	.00681	14.1					---	---	---	---	---	---
M_I .001822	.155	.00859	.000549	.0000305	.155	.00856	13.7					---	---	---	---	---	---
												2780.	2780.	2810.	2780.	2780.	2780.
.002	.155	.00957	.000602	.0000372	.154	.00952	13.4					2250.	2250.	2260.	2250.	2250.	2250.
.003	.154	.0149	.000895	.0000864	.154	.0148	12.1					871.	871.	883.	871.	871.	871.
.004	.154	.0199	.00119	.000153	.153	.0197	10.8					444.	444.	456.	444.	444.	444.
M_V .004254	.154	.0211	.00126	.000172	.153	.0209	10.5					389.	389.	398.	389.	389.	389.
												1220.	1220.	1230.	1220.	1220.	1220.
M_{IV} .004502	.154	.0222	.00133	.000192	.152	.0220	10.2					1090.	1090.	1100.	1090.	1090.	1090.
												1230.	1230.	1240.	1230.	1230.	1230.
.005	.153	.0245	.00147	.000234	.152	.0242	9.69					885.	885.	895.	885.	885.	885.
M_{III} .005117	.153	.0249	.00150	.000245	.152	.0247	9.57					825.	825.	835.	825.	825.	825.
												948.	948.	957.	948.	948.	948.
.006	.153	.0285	.00175	.000326	.151	.0283	8.71					665.	665.	674.	665.	665.	665.
M_{II} .006353	.153	.0300	.00185	.000362	.151	.0295	8.40					585.	585.	595.	585.	585.	585.
												698.	698.	708.	698.	698.	698.
M_I .006735	.152	.0314	.00195	.000403	.150	.0309	8.08					585.	585.	593.	585.	585.	585.
												648.	648.	655.	648.	648.	648.
.008	.152	.0360	.00230	.000545	.149	.0355	7.13					405.	405.	413.	405.	405.	405.
.01	.151	.0427	.00283	.000801	.148	.0420	5.93					224.	224.	230.	224.	224.	224.
.015	.148	.0559	.00408	.00154	.144	.0545	4.01					74.6	74.6	78.7	74.6	74.6	74.6
L_{III} .019929	.145	.0657	.00523	.00236	.140	.0633	2.90					34.8	34.8	37.7	34.8	34.8	34.8
												79.4	56.6	82.3	79.4	79.4	56.6
.02	.145	.0657	.00523	.00237	.140	.0633	2.90					78.4	56.1	81.3	78.4	78.4	56.1
L_{II} .025125	.143	.0732	.00633	.00324	.137	.0698	2.16					46.3	35.7	48.5	46.3	46.3	35.7
												63.8	47.7	66.0	63.8	63.8	47.7
L_I .026030	.142	.0741	.00653	.00341	.136	.0708	2.06					57.8	43.9	60.0	57.8	57.8	43.9
												67.7	50.9	69.8	67.7	67.7	50.9
.03	.140	.0784	.00732	.00408	.133	.0744	1.69					46.5	36.5	48.2	46.5	46.5	36.5
.04	.136	.0861	.00907	.00573	.127	.0804	1.12					22.2	18.7	23.4	22.3	22.2	18.7
.05	.132	.0909	.0107	.00734	.121	.0835	.804					12.4	10.8	13.3	12.5	12.4	10.8
.06	.128	.0938	.0120	.00880	.116	.0849	.602					7.70	6.89	8.40	7.80	7.72	6.89
.08	.122	.0960	.0143	.0112	.107	.0847	.367					3.60	3.31	4.05	3.69	3.62	3.31
.1	.116	.0962	.0160	.0133	.0998	.0830	.245					1.96	1.86	2.32	2.08	2.00	1.87
K .135005	.107	.0955	.0182	.0162	.0892	.0792	.141					.842	.801	1.08	.938	.861	.818
												3.62	1.15	3.86	3.72	3.65	1.17
.15	.104	.0940	.0189	.0171	.0854	.0770	.116					2.78	1.08	3.00	2.88	2.81	1.09
.2	.0955	.0892	.0207	.0193	.0748	.0701	.0672					1.34	.724	1.50	1.43	1.37	.744
.3	.0830	.0799	.0224	.0215	.0607	.0583	.0305					.482	.333	.593	.561	.504	.358
.4	.0744	.0727	.0231	.0221	.0513	.0506	.0173					.242	.187	.333	.314	.266	.209
.5	.0679	.0667	.0232	.0223	.0449	.0444	.0112					.144	.118	.222	.211	.167	.140
.6	.0629	.0621	.0231	.0223	.0398	.0398	.00777					.0962	.0816	.166	.158	.119	.104
.8	.0552	.0547	.0226	.0216	.0326	.0331	.00439					.0516	.0456	.111	.106	.0741	.0672
1.	.0497	.0494	.0218	.0203	.0278	.0293	.00283					.0329	.0297	.0852	.0823	.0547	.0499
1.5	.0403	.0401	.0200	.0186	.0204	.0215	.00128	.00221		.00221	.000662	.0157	.0148	.0593	.0581	.0379	.0341
2.	.0343	.0343	.0183	.0168	.0161	.0175	.000722	.00679		.00679	.00307	.00952	.00909	.0513	.0506	.0345	.0290
3.	.0271	.0271	.0156	.0138	.0114	.0133	.000321	.0143	.00000948	.0143	.00849	.00509	.00494	.0468	.0465	.0350	.0271
4.	.0226	.0226	.0137	.0115	.00890	.0112	.000181	.0198	.0000386	.0199	.0130	.00345	.00338	.0461	.0458	.0369	.0278
5.	.0195	.0195	.0123	.00984	.00727	.00969	.000118	.0245	.0000760	.0245	.0167	.00254	.00249	.0465	.0465	.0393	.0290
6.	.0173	.0173	.0111	.00856	.00614	.00871	.0000818	.0281	.000117	.0281	.0195	.00200	.00196	.0475	.0473	.0413	.0300
8.	.0141	.0141	.00943	.00677	.00470	.00736	.0000461	.0345	.000197	.0348	.0240	.00137	.00135	.0504	.0504	.0456	.0321
10.	.0120	.0120	.00823	.00566	.00381	.00636	.0000293	.0405	.000273	.0408	.0276	.00103	.00102	.0540	.0537	.0501	.0343
15.	.00890	.00890	.00631	.00410	.00259	.00480	.0000134	.0518	.000422	.0523	.0324	.000626	.000621	.0619	.0619	.0593	.0372
20.	.00715	.00715	.00518	.00307	.00195	.00408	.0000071	.0607	.000528	.0612	.0350	.000456	.000453	.0689	.0689	.0667	.0386
30.	.00521	.00521	.00389	.00196	.00131	.00324		.0722	.000681	.0729	.0369	.000290	.000290	.0784	.0784	.0770	.0391
40.	.00413	.00413	.00314	.00138	.000993	.00273		.0804	.000792	.0811	.0360	.000211	.000211	.0854	.0854	.0844	.0377
50.	.00345	.00345	.00266	.00105	.000794	.00240		.0866	.000880	.0876	.0353	.000165	.000165	.0912	.0912	.0904	.0365
60.	.00297	.00297	.00231	.000828	.000665	.00215		.0914	.000943	.0924	.0345	.000135	.000134	.0955	.0955	.0948	.0355
80.	.00234	.00234	.00184	.000561	.000501	.00178		.0981	.00104	.0991	.0331	.0000981	.0000981	.101	.101	.101	.0338
100.	.00195	.00195	.00154	.000417	.000401	.00153		.103	.00112	.104	.0312	.0000768	.0000768	.106	.106	.106	.0317

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(barns/atom)

E (MeV)	KN $\sigma_{inc,t}$	BD $\sigma_{inc,t}$	KN $\sigma_{inc,a}$	BD $\sigma_{inc,a}$	KN $\sigma_{inc,s}$	BD $\sigma_{inc,s}$	σ_{coh}	$\sigma_{n,n}$	$\sigma_{n,e}$	$\sigma_{n,t}$	$\sigma_{n,a}$	$\sigma_{\gamma,t}$	$\sigma_{\gamma,a}$	$\sigma_{tot,t}$	$\sigma_{tot,t-coh}$	$\sigma_{tot,a}$	$\sigma_{tot,en}$
.001	65.6	1.69	.128	.00329	65.5	1.69	6230.					---	---	---	---	---	---
.0015	65.5	2.83	.191	.00826	65.3	2.82	5990.					---	---	---	---	---	---
π_I .001891	65.4	3.72	.240	.0137	65.1	3.71	5780.					---	---	---	---	---	---
												1110000.	1110000.	1120000.	1110000.	1110000.	1110000.
.002	65.3	3.97	.254	.0154	65.1	3.95	5720.					974000.	974000.	980000.	974000.	974000.	974000.
.003	65.1	6.19	.377	.0359	64.7	6.15	5160.					376000.	376000.	381000.	376000.	376000.	376000.
.004	64.8	8.27	.499	.0636	64.3	8.21	4630.					193000.	193000.	198000.	193000.	193000.	193000.
π_V .004378	64.7	9.01	.544	.0758	64.2	8.93	4440.					157000.	157000.	161000.	157000.	157000.	157000.
												492000.	492000.	496000.	492000.	492000.	492000.
π_{IV} .004644	64.7	9.51	.576	.0847	64.1	9.43	4310.					438000.	438000.	442000.	438000.	438000.	438000.
												496000.	496000.	500000.	496000.	496000.	496000.
.005	64.6	10.2	.619	.0977	64.0	10.1	4140.					391000.	391000.	395000.	391000.	391000.	391000.
π_{III} .005259	64.5	10.6	.649	.107	63.9	10.5	4030.					334000.	334000.	338000.	334000.	334000.	334000.
												384000.	384000.	388000.	384000.	384000.	384000.
.006	64.3	11.9	.737	.136	63.6	11.8	3720.					285000.	285000.	289000.	285000.	285000.	285000.
π_{II} .006564	64.2	12.9	.802	.161	63.4	12.7	3510.					235000.	235000.	239000.	235000.	235000.	235000.
												280000.	280000.	284000.	280000.	280000.	280000.
π_I .006949	64.1	13.5	.847	.178	63.3	13.3	3370.					235000.	235000.	238000.	235000.	235000.	235000.
												260000.	260000.	263000.	260000.	260000.	260000.
.008	63.9	15.1	.967	.229	62.9	14.9	3040.					177000.	177000.	180000.	177000.	177000.	177000.
.01	63.4	17.8	1.19	.334	62.2	17.5	2530.					97500.	97500.	100000.	97500.	97500.	97500.
.015	62.3	23.4	1.72	.647	60.5	22.8	1710.					32600.	32600.	34300.	32600.	32600.	32600.
.02	61.2	27.6	2.21	.996	59.0	26.6	1240.					14900.	14900.	16200.	14900.	14900.	14900.
L_{III} .020414	61.1	27.9	2.24	1.03	58.8	26.9	1210.					14200.	14200.	15400.	14200.	14200.	14200.
												32200.	23000.	33400.	32200.	32200.	23000.
L_{II} .025883	60.0	31.1	2.73	1.42	57.2	29.7	889.					18500.	14300.	19400.	18500.	18500.	14300.
												25600.	19200.	26500.	25600.	25600.	19200.
L_I .026803	59.8	31.5	2.81	1.48	57.0	30.0	847.					23200.	17600.	24100.	23200.	23200.	17600.
												27100.	20500.	28000.	27100.	27100.	20500.
.03	59.1	32.9	3.08	1.71	56.1	31.2	724.					20100.	15700.	20900.	20100.	20100.	15700.
.04	57.3	36.1	3.82	2.41	53.5	33.7	480.					9580.	8010.	10100.	9620.	9580.	8010.
.05	55.6	38.2	4.48	3.08	51.1	35.1	344.					5400.	4690.	5780.	5460.	5400.	4690.
.06	54.0	39.4	5.07	3.70	49.0	35.7	257.					3340.	2970.	3640.	3380.	3350.	2970.
.08	51.2	40.3	6.00	4.72	45.2	35.6	157.					1570.	1440.	1770.	1610.	1580.	1440.
.1	48.8	40.4	6.73	5.58	42.1	34.8	105.					864.	807.	1010.	904.	871.	813.
K .138502	44.9	40.0	7.74	6.90	37.2	33.1	57.6					343.	327.	441.	383.	351.	334.
												1460.	466.	1580.	1500.	1470.	473.
.15	43.9	39.6	7.97	7.19	35.9	32.4	49.6					1200.	446.	1290.	1240.	1210.	453.
.2	40.2	37.5	8.70	8.11	31.5	29.4	28.7					581.	307.	647.	618.	590.	315.
.3	35.0	33.6	9.43	9.06	25.6	24.5	13.1					210.	144.	257.	244.	219.	153.
.4	31.3	30.6	9.71	9.30	21.6	21.3	7.41					105.	80.2	143.	136.	115.	89.5
.5	28.6	28.1	9.76	9.41	18.9	18.7	4.80					63.0	51.1	95.9	91.1	72.8	60.5
.6	26.5	26.1	9.73	9.37	16.8	16.7	3.32					42.0	35.4	71.4	68.1	51.7	44.8
.8	23.3	23.1	9.51	9.12	13.8	14.0	1.88					22.4	19.8	47.4	45.5	31.9	28.9
1.	20.9	20.8	9.20	8.51	11.7	12.3	1.21					14.3	13.0	36.3	35.1	23.5	21.5
1.5	17.0	16.9	8.40	7.84	8.58	9.06	.549	.945		.945	.283	6.85	6.42	25.2	24.7	16.2	14.5
2.	14.5	14.5	7.69	7.10	6.80	7.39	.310	2.92		2.92	1.32	4.15	3.95	21.9	21.6	14.8	12.4
3.	11.4	11.4	6.57	5.78	4.82	5.62	.137	6.09	.00399	6.09	3.62	2.22	2.15	19.8	19.7	14.9	11.6
4.	9.52	9.52	5.78	4.82	3.74	4.70	.0776	8.42	.0163	8.44	5.50	1.49	1.45	19.5	19.4	15.7	11.8
5.	8.22	8.22	5.16	4.13	3.06	4.09	.0505	10.4	.0321	10.4	7.09	1.10	1.08	19.8	19.7	16.7	12.3
6.	7.27	7.27	4.68	3.60	2.59	3.67	.0350	12.0	.0493	12.0	8.33	.870	.856	20.2	20.1	17.5	12.8
8.	5.95	5.95	3.97	2.84	1.98	3.11	.0197	14.7	.0829	14.8	10.2	.597	.590	21.4	21.3	19.4	13.6
10.	5.06	5.06	3.46	2.38	1.60	2.68	.0125	17.2	.116	17.3	11.6	.450	.446	22.8	22.8	21.2	14.4
15.	3.75	3.75	2.66	1.73	1.09	2.02	.00573	22.0	.178	22.2	13.7	.273	.271	26.2	26.2	25.1	15.7
20.	3.01	3.01	2.19	1.29	.823	1.72	.00307	25.8	.222	26.0	14.8	.198	.197	29.2	29.2	28.4	16.3
30.	2.19	2.19	1.64	.821	.553	1.37		30.7	.287	31.0	15.6	.127	.127	33.3	33.3	32.8	16.5
40.	1.74	1.74	1.32	.581	.418	1.16		34.2	.333	34.5	15.2	.0920	.0918	36.3	36.3	35.9	15.9
50.	1.45	1.45	1.12	.441	.335	1.01		36.8	.370	37.2	14.9	.0720	.0719	38.7	38.7	38.4	15.4
60.	1.25	1.25	.971	.346	.280	.904		38.8	.397	39.2	14.6	.0590	.0589	40.5	40.5	40.2	15.0
80.	.987	.987	.776	.236	.211	.751		41.7	.438	42.1	14.0	.0428	.0427	43.1	43.1	42.9	14.3
100.	.820	.820	.651	.175	.169	.645		43.9	.471	44.4	13.3	.0335	.0335	45.3	45.3	45.1	13.5

99 EINSTEINIUM
($cm^2/g = 0.002371 \times$ barns/atom)

E (MeV)	$(\frac{\mu}{\rho})^{KN}_{inc,t}$	$(\frac{\mu}{\rho})^{BD}_{inc,t}$	$(\frac{\mu}{\rho})^{KN}_{inc,a}$	$(\frac{\mu}{\rho})^{BD}_{inc,a}$	$(\frac{\mu}{\rho})^{KN}_{inc,s}$	$(\frac{\mu}{\rho})^{BD}_{inc,s}$	$(\frac{\mu}{\rho})_{coh}$	$(\frac{\mu}{\rho})_{\kappa n}$	$(\frac{\mu}{\rho})_{\kappa e}$	$(\frac{\mu}{\rho})_{\kappa,t}$	$(\frac{\mu}{\rho})_{\kappa,a}$	$(\frac{\mu}{\rho})_{\tau,t}$	$(\frac{\mu}{\rho})_{\tau,a}$	$(\frac{\mu}{\rho})_{tot,t}$	$(\frac{\mu}{\rho})_{tot,t-coh}$	$(\frac{\mu}{\rho})_{tot,a}$	$(\frac{\mu}{\rho})_{tot,en}$
.001	.156	.00401	.000303	.0000078	.155	.00401	14.8					---	---	---	---	---	---
.0015	.155	.00671	.000453	.0000196	.155	.00669	14.2					---	---	---	---	---	---
M_I .001891	.155	.00882	.000569	.0000325	.154	.00880	13.7					---	---	---	---	---	---
												2630.	2630.	2660.	2630.	2630.	2630.
.002	.155	.00941	.000602	.0000365	.154	.00937	13.6					2310.	2310.	2320.	2310.	2310.	2310.
.003	.154	.0147	.000894	.0000851	.153	.0146	12.2					891.	891.	903.	891.	891.	891.
.004	.154	.0196	.00118	.000151	.152	.0195	11.0					458.	458.	469.	458.	458.	458.
M_V .004378	.153	.0214	.00129	.000180	.152	.0212	10.5					372.	372.	382.	372.	372.	372.
												1170.	1170.	1180.	1170.	1170.	1170.
M_{IV} .004644	.153	.0225	.00137	.000201	.152	.0224	10.2					1040.	1040.	1050.	1040.	1040.	1040.
												1180.	1180.	1190.	1180.	1180.	1180.
.005	.153	.0242	.00147	.000232	.152	.0239	9.82					927.	927.	937.	927.	927.	927.
M_{III} .005259	.153	.0251	.00154	.000254	.152	.0249	9.56					792.	792.	801.	792.	792.	792.
												910.	910.	920.	910.	910.	910.
.006	.152	.0282	.00175	.000322	.151	.0280	8.82					676.	676.	685.	676.	676.	676.
M_{II} .006564	.152	.0306	.00190	.000382	.150	.0301	8.32					557.	557.	567.	557.	557.	557.
												664.	664.	673.	664.	664.	664.
M_I .006949	.152	.0320	.00201	.000422	.150	.0315	7.99					557.	557.	564.	557.	557.	557.
												616.	616.	624.	616.	616.	616.
.008	.152	.0358	.00229	.000543	.149	.0353	7.21					420.	420.	427.	420.	420.	420.
.01	.150	.0422	.00282	.000792	.147	.0415	6.08					231.	231.	237.	231.	231.	231.
.015	.148	.0555	.00408	.00153	.143	.0541	4.05					77.3	77.3	81.3	77.3	77.3	77.3
.02	.145	.0654	.00524	.00236	.140	.0631	2.94					35.3	35.3	38.4	35.3	35.3	35.3
L_{III} .020414	.145	.0662	.00531	.00244	.139	.0638	2.87					33.7	33.7	36.5	33.7	33.7	33.7
												76.3	54.5	79.2	76.3	76.3	54.5
L_{II} .025883	.142	.0737	.00647	.00337	.136	.0704	2.11					43.9	33.9	46.8	43.9	43.9	33.9
												60.7	45.5	62.8	60.7	60.7	45.5
L_I .026803	.142	.0747	.00666	.00351	.135	.0711	2.01					55.0	41.7	57.1	55.0	55.0	41.7
												64.3	48.6	66.4	64.3	64.3	48.6
.03	.140	.0780	.00730	.00405	.133	.0740	1.72					47.7	37.2	49.6	47.7	47.7	37.2
.04	.136	.0856	.00906	.00571	.127	.0799	1.14					22.7	19.0	23.9	22.8	22.7	19.0
.05	.132	.0906	.0106	.00730	.121	.0832	.816					12.8	11.1	13.7	12.9	12.8	11.1
.06	.128	.0934	.0120	.00877	.116	.0846	.609					7.92	7.04	8.63	8.01	7.94	7.04
.08	.121	.0956	.0142	.0112	.107	.0844	.372					3.72	3.41	4.20	3.82	3.75	3.41
.1	.116	.0958	.0160	.0132	.0998	.0825	.249					2.05	1.91	2.39	2.14	2.07	1.93
K .138502	.106	.0948	.0184	.0164	.0882	.0785	.137					.813	.775	1.05	.908	.832	.792
												3.46	1.10	3.70	3.56	3.49	1.12
.15	.104	.0939	.0189	.0170	.0851	.0768	.118					2.85	1.06	3.06	2.94	2.87	1.07
.2	.0953	.0889	.0206	.0192	.0747	.0697	.0880					1.38	.728	1.53	1.47	1.40	.747
.3	.0830	.0797	.0224	.0215	.0607	.0581	.0311					.498	.341	.609	.579	.519	.363
.4	.0742	.0726	.0230	.0221	.0512	.0505	.0176					.249	.190	.339	.322	.273	.212
.5	.0678	.0666	.0231	.0223	.0448	.0443	.0114					.149	.121	.227	.216	.173	.143
.6	.0628	.0619	.0231	.0222	.0398	.0396	.00787					.0996	.0839	.169	.161	.123	.100
.8	.0552	.0548	.0225	.0216	.0327	.0332	.00446					.0531	.0469	.112	.108	.0756	.0605
1.	.0496	.0493	.0218	.0202	.0277	.0292	.00287					.0339	.0308	.0861	.0832	.0557	.0510
1.5	.0403	.0401	.0199	.0186	.0203	.0215	.00130	.00224		.00224	.000671	.0162	.0152	.0597	.0586	.0384	.0344
2.	.0344	.0344	.0182	.0168	.0161	.0175	.000735	.00692		.00692	.00313	.00984	.00937	.0519	.0512	.0351	.0294
3.	.0270	.0270	.0156	.0137	.0114	.0133	.000325	.0144	.00000946	.0144	.00858	.00526	.00510	.0469	.0467	.0353	.0275
4.	.0226	.0226	.0137	.0114	.00887	.0111	.000184	.0200	.0000386	.0200	.0130	.00353	.00344	.0462	.0460	.0372	.0289
5.	.0195	.0195	.0122	.00979	.00726	.00970	.000120	.0247	.0000761	.0247	.0168	.00261	.00256	.0469	.0467	.0396	.0292
6.	.0172	.0172	.0111	.00854	.00614	.00870	.0000830	.0285	.000117	.0285	.0198	.00206	.00203	.0479	.0477	.0415	.0303
8.	.0141	.0141	.00941	.00673	.00469	.00737	.0000467	.0349	.000197	.0351	.0242	.00142	.00140	.0507	.0505	.0460	.0322
10.	.0120	.0120	.00820	.00564	.00379	.00635	.0000296	.0408	.000275	.0410	.0275	.00107	.00106	.0541	.0541	.0503	.0341
15.	.00889	.00889	.00631	.00410	.00258	.00479	.0000136	.0522	.000422	.0526	.0325	.000647	.000643	.0621	.0621	.0595	.0372
20.	.00714	.00714	.00519	.00306	.00195	.00408	.0000073	.0612	.000526	.0616	.0351	.000469	.000467	.0692	.0692	.0673	.0386
30.	.00519	.00519	.00389	.00195	.00131	.00325		.0728	.000680	.0735	.0370	.000301	.000301	.0790	.0790	.0778	.0391
40.	.00413	.00413	.00313	.00138	.000991	.00275		.0811	.000790	.0818	.0360	.000218	.000218	.0861	.0861	.0851	.0377
50.	.00344	.00344	.00266	.00105	.000794	.00239		.0873	.000877	.0882	.0353	.000171	.000170	.0918	.0918	.0910	.0365
60.	.00296	.00296	.00230	.000820	.000664	.00214		.0920	.000941	.0929	.0346	.000140	.000140	.0960	.0960	.0953	.0356
80.	.00234	.00234	.00184	.000560	.000500	.00178		.0989	.00104	.0998	.0332	.000101	.000101	.102	.102	.102	.0339
100.	.00194	.00194	.00154	.000415	.000401	.00153		.104	.00112	.105	.0315	.0000794	.0000794	.107	.107	.107	.0320

100 FERMIUM
(barns/atom)

E (MeV)	KN $\sigma_{inc,t}$	BD $\sigma_{inc,t}$	KN $\sigma_{inc,a}$	BD $\sigma_{inc,a}$	KN $\sigma_{inc,s}$	BD $\sigma_{inc,s}$	σ_{coh}	σ_{x_n}	σ_{x_e}	$\sigma_{x,t}$	$\sigma_{x,a}$	$\sigma_{r,t}$	$\sigma_{r,a}$	$\sigma_{tot,t}$	$\sigma_{tot,t-coh}$	$\sigma_{tot,a}$	$\sigma_{tot,en}$
.001	66.3	1.68	.129	.00327	66.1	1.68	6360.					---	---	---	---	---	---
.0015	66.1	2.81	.193	.00820	65.9	2.80	6120.					---	---	---	---	---	---
N_I .001961	66.0	3.86	.251	.0147	65.8	3.85	5870.					---	---	---	---	---	---
												1060000.	1060000.	1070000.	1060000.	1060000.	1060000.
.002	66.0	3.95	.256	.0153	65.7	3.93	5850.					102000.	102000.	106000.	102000.	102000.	102000.
.003	65.7	6.18	.381	.0358	65.4	6.14	5290.					391000.	391000.	396000.	391000.	391000.	391000.
.004	65.5	8.26	.504	.0636	65.0	8.20	4740.					199000.	199000.	204000.	199000.	199000.	199000.
M_V .004504	65.4	9.24	.565	.0799	64.8	9.16	4480.					152000.	152000.	156000.	152000.	152000.	152000.
												477000.	477000.	481000.	477000.	477000.	477000.
M_{IV} .004790	65.3	9.78	.600	.0898	64.7	9.69	4350.					423000.	423000.	427000.	423000.	423000.	423000.
												479000.	479000.	483000.	479000.	479000.	479000.
.005	65.2	10.2	.625	.0977	64.6	10.1	4250.					416000.	416000.	420000.	416000.	416000.	416000.
M_{III} .005403	65.1	10.9	.673	.113	64.5	10.8	4060.					324000.	324000.	328000.	324000.	324000.	324000.
												373000.	373000.	377000.	373000.	373000.	373000.
.006	65.0	11.9	.744	.136	64.3	11.8	3810.					296000.	296000.	300000.	296000.	296000.	296000.
M_{II} .006780	64.8	13.2	.836	.170	64.0	13.0	3520.					226000.	226000.	230000.	226000.	226000.	226000.
												269000.	269000.	273000.	269000.	269000.	269000.
M_I .007168	64.7	13.8	.881	.188	63.8	13.6	3380.					227000.	227000.	230000.	227000.	227000.	227000.
												250000.	250000.	253000.	250000.	250000.	250000.
.008	64.5	15.1	.976	.229	63.5	14.9	3120.					185000.	185000.	188000.	185000.	185000.	185000.
.01	64.0	17.9	1.20	.335	62.8	17.6	2590.					102000.	102000.	105000.	102000.	102000.	102000.
.015	62.9	23.5	1.74	.650	61.2	22.8	1750.					34100.	34100.	35900.	34100.	34100.	34100.
.02	61.8	27.7	2.23	1.00	59.6	26.7	1270.					15600.	15600.	16900.	15600.	15600.	15600.
L_{III} .020907	61.6	28.4	2.31	1.07	59.3	27.3	1200.					13900.	13900.	15100.	13900.	13900.	13900.
												31400.	22500.	32600.	31400.	31400.	22500.
L_{II} .026659	60.4	31.7	2.83	1.48	57.6	30.2	875.					17800.	13800.	18700.	17800.	17800.	13800.
												24600.	18500.	25500.	24600.	24600.	18500.
L_I .027594	60.2	32.1	2.91	1.55	57.3	30.5	835.					22300.	17000.	23200.	22300.	22300.	17000.
												26100.	19800.	27000.	26100.	26100.	19800.
.03	59.7	33.1	3.11	1.72	56.6	31.4	743.					20900.	16200.	21700.	20900.	20900.	16200.
.04	57.9	36.4	3.86	2.43	54.0	34.0	492.					10000.	8320.	10500.	10000.	10000.	8320.
.05	56.1	38.5	4.53	3.11	51.6	35.4	352.					5610.	4860.	6000.	5650.	5610.	4860.
.06	54.6	39.7	5.12	3.73	49.4	36.0	264.					3490.	3100.	3790.	3530.	3500.	3100.
.08	51.7	40.7	6.06	4.77	45.7	35.9	161.					1640.	1500.	1840.	1680.	1650.	1500.
.1	49.3	40.8	6.80	5.63	42.5	35.2	107.					900.	860.	1050.	961.	907.	846.
K .142085	45.0	40.3	7.90	7.06	37.1	33.2	56.3					335.	319.	432.	375.	343.	326.
												1420.	453.	1520.	1460.	1430.	460.
.15	44.4	40.0	8.05	7.26	36.3	32.7	50.9					1240.	440.	1330.	1280.	1250.	447.
.2	40.6	37.9	8.79	8.19	31.9	29.7	29.5					604.	312.	671.	642.	613.	320.
.3	35.3	34.0	9.53	9.17	25.8	24.8	13.4					219.	148.	266.	253.	229.	157.
.4	31.7	30.9	9.81	9.39	21.9	21.5	7.60					110.	83.4	148.	141.	120.	92.8
.5	28.9	28.4	9.86	9.49	19.0	18.9	4.93					65.8	53.1	99.1	94.2	75.7	62.6
.6	26.7	26.4	9.83	9.48	16.9	16.9	3.42					43.8	36.7	73.6	70.2	53.6	46.2
.8	23.5	23.3	9.61	9.20	13.9	14.1	1.93					23.4	20.6	48.6	46.7	33.0	29.8
1.	21.1	21.0	9.29	8.59	11.8	12.4	1.24					14.9	13.5	37.1	35.9	24.2	22.1
1.5	17.2	17.1	8.49	7.93	8.67	9.17	.561	.970		.970	.291	7.14	6.68	25.8	25.2	16.6	14.9
2.	14.6	14.6	7.77	7.15	6.87	7.45	.320	3.00		3.00	1.36	4.38	4.17	22.3	22.0	15.1	12.7
3.	11.5	11.5	6.64	5.82	4.86	5.68	.140	6.22	.00403	6.22	3.70	2.32	2.25	20.2	20.0	15.2	11.8
4.	9.62	9.62	5.84	4.86	3.78	4.76	.0797	8.60	.0165	8.62	5.62	1.55	1.51	19.9	19.8	16.0	12.0
5.	8.31	8.31	5.22	4.17	3.09	4.14	.0518	10.6	.0323	10.6	7.22	1.14	1.12	20.1	20.0	17.0	12.5
6.	7.34	7.34	4.73	3.63	2.61	3.71	.0359	12.2	.0498	12.2	8.46	.900	.885	20.5	20.4	17.8	13.0
8.	6.01	6.01	4.01	2.87	2.00	3.14	.0202	15.0	.0836	15.1	10.4	.623	.615	21.8	21.7	19.7	13.9
10.	5.11	5.11	3.50	2.40	1.62	2.71	.0128	17.5	.117	17.6	11.8	.470	.465	23.2	23.2	21.6	14.7
15.	3.79	3.79	2.69	1.75	1.10	2.04	.00586	22.5	.179	22.7	13.9	.286	.284	26.8	26.8	25.7	15.9
20.	3.04	3.04	2.21	1.30	.831	1.74	.00316	26.3	.224	26.5	15.1	.208	.207	29.8	29.7	28.9	16.6
30.	2.21	2.21	1.65	.827	.559	1.38		31.3	.290	31.6	15.8	.133	.133	33.9	33.9	33.4	16.8
40.	1.76	1.76	1.34	.586	.422	1.17		35.0	.336	35.3	15.4	.0962	.0960	37.2	37.2	36.7	16.1
50.	1.47	1.47	1.13	.445	.338	1.02		37.4	.373	37.8	15.1	.0750	.0749	39.3	39.3	39.0	15.6
60.	1.26	1.26	.981	.348	.283	.912		39.5	.400	39.9	14.8	.0614	.0613	41.2	41.2	40.9	15.2
80.	.997	.997	.784	.237	.213	.760		42.5	.442	42.9	14.2	.0447	.0446	43.9	43.9	43.7	14.5
100.	.828	.828	.657	.177	.171	.651		44.5	.475	45.0	13.4	.0349	.0349	45.9	45.9	45.7	13.6

100 FERMIUM
(cm^2/g = 0.002380 x barns/atom)

E (MeV)	$(\frac{\mu}{\rho})^{KN}_{inc,t}$	$(\frac{\mu}{\rho})^{BD}_{inc,t}$	$(\frac{\mu}{\rho})^{KN}_{inc,a}$	$(\frac{\mu}{\rho})^{BD}_{inc,a}$	$(\frac{\mu}{\rho})^{KN}_{inc,s}$	$(\frac{\mu}{\rho})^{BD}_{inc,s}$	$(\frac{\mu}{\rho})_{coh}$	$(\frac{\mu}{\rho})_{\kappa n}$	$(\frac{\mu}{\rho})_{\kappa e}$	$(\frac{\mu}{\rho})_{\kappa,t}$	$(\frac{\mu}{\rho})_{\kappa,a}$	$(\frac{\mu}{\rho})_{\tau,t}$	$(\frac{\mu}{\rho})_{\tau,a}$	$(\frac{\mu}{\rho})_{tot,t}$	$(\frac{\mu}{\rho})_{tot,t-coh}$	$(\frac{\mu}{\rho})_{tot,a}$	$(\frac{\mu}{\rho})_{tot,en}$
.001	.158	.00400	.000307	.0000078	.157	.00400	15.1					---	---	---	---	---	---
.0015	.157	.00669	.000459	.0000195	.157	.00666	14.6					---	---	---	---	---	---
N_I .001961	.157	.00919	.000597	.0000350	.157	.00916	14.0					---	---	---	---	---	---
												2520.	2520.	2550.	2520.	2520.	2520.
.002	.157	.00940	.000609	.0000364	.156	.00935	13.9					243.	243.	257.	243.	243.	243.
.003	.156	.0147	.000907	.0000852	.156	.0146	12.6					931.	931.	942.	931.	931.	931.
.004	.156	.0197	.00120	.000151	.155	.0195	11.3					474.	474.	486.	474.	474.	474.
N_V .004504	.156	.0220	.00134	.000190	.154	.0218	10.7					362.	362.	371.	362.	362.	362.
												1140.	1140.	1140.	1140.	1140.	1140.
N_{IV} .00479	.155	.0233	.00143	.000214	.154	.0231	10.4					1010.	1010.	1020.	1010.	1010.	1010.
												1140.	1140.	1150.	1140.	1140.	1140.
.005	.155	.0243	.00149	.000233	.154	.0240	10.1					990.	990.	1000.	990.	990.	990.
M_{III} .005403	.155	.0259	.00160	.000269	.154	.0257	9.66					771.	771.	781.	771.	771.	771.
												888.	888.	897.	888.	888.	888.
.006	.155	.0283	.00177	.000324	.153	.0281	9.07					704.	704.	714.	704.	704.	704.
M_{II} .00678	.154	.0314	.00199	.000405	.152	.0309	8.38					538.	538.	547.	538.	538.	538.
												640.	640.	650.	640.	640.	640.
M_I .007168	.154	.0328	.00210	.000447	.152	.0324	8.04					540.	540.	547.	540.	540.	540.
												595.	595.	602.	595.	595.	595.
.008	.154	.0359	.00232	.000545	.151	.0355	7.43					440.	440.	447.	440.	440.	440.
.01	.152	.0426	.00286	.000797	.149	.0419	6.16					243.	243.	250.	243.	243.	243.
.015	.150	.0559	.00414	.00155	.146	.0543	4.16					81.2	81.2	85.4	81.2	81.2	81.2
.02	.147	.0659	.00531	.00238	.142	.0635	3.02					37.1	37.1	40.2	37.1	37.1	37.1
L_{III} .020907	.147	.0676	.00550	.00255	.141	.0650	2.86					33.1	33.1	35.9	33.1	33.1	33.1
												74.7	53.5	77.6	74.7	74.7	53.5
L_{II} .026659	.144	.0754	.00674	.00352	.137	.0719	2.08					42.4	32.8	44.5	42.4	42.4	32.8
												58.5	44.0	60.7	58.5	58.5	44.0
L_I .027594	.143	.0764	.00693	.00369	.136	.0726	1.99					53.1	40.5	55.2	53.1	53.1	40.5
												62.1	47.1	64.3	62.1	62.1	47.1
.03	.142	.0788	.00740	.00409	.135	.0747	1.77					49.7	38.6	51.6	49.7	49.7	38.6
.04	.138	.0866	.00919	.00578	.129	.0809	1.17					23.8	19.8	25.0	23.8	23.8	19.8
.05	.134	.0916	.0108	.00740	.123	.0843	.838					13.4	11.6	14.3	13.4	13.4	11.6
.06	.130	.0945	.0122	.00888	.118	.0857	.628					8.31	7.38	9.02	8.40	8.33	7.38
.08	.123	.0969	.0144	.0114	.109	.0854	.383					3.90	3.57	4.38	4.00	3.93	3.57
.1	.117	.0971	.0162	.0134	.101	.0838	.255					2.14	2.00	2.50	2.24	2.16	2.01
K .142085	.107	.0959	.0188	.0168	.0883	.0790	.134					.797	.759	1.03	.892	.816	.776
												3.38	1.08	3.62	3.47	3.40	1.09
.15	.106	.0952	.0192	.0173	.0864	.0778	.121					2.95	1.05	3.17	3.05	2.97	1.06
.2	.0966	.0902	.0209	.0195	.0759	.0707	.0702					1.44	.743	1.60	1.53	1.46	.762
.3	.0840	.0809	.0227	.0218	.0614	.0590	.0319					.521	.352	.633	.602	.545	.374
.4	.0754	.0735	.0233	.0223	.0521	.0512	.0181					.262	.198	.352	.336	.286	.221
.5	.0688	.0676	.0235	.0226	.0452	.0450	.0117					.157	.126	.236	.224	.180	.149
.6	.0635	.0628	.0234	.0226	.0402	.0402	.00814					.104	.0873	.175	.167	.128	.110
.8	.0559	.0555	.0229	.0219	.0331	.0336	.00459					.0557	.0490	.116	.111	.0785	.0709
1.	.0502	.0500	.0221	.0204	.0281	.0295	.00295					.0355	.0321	.0883	.0854	.0576	.0526
1.5	.0409	.0407	.0202	.0189	.0206	.0218	.00134	.00231		.00231	.000693	.0170	.0159	.0614	.0600	.0395	.0355
2.	.0347	.0347	.0185	.0170	.0164	.0177	.000762	.00714		.00714	.00324	.0104	.00992	.0531	.0524	.0359	.0302
3.	.0274	.0274	.0158	.0139	.0116	.0135	.000333	.0148	.00000959	.0148	.00881	.00552	.00535	.0481	.0476	.0362	.0281
4.	.0229	.0229	.0139	.0116	.00900	.0113	.000190	.0205	.0000393	.0205	.0134	.00369	.00359	.0474	.0471	.0381	.0286
5.	.0198	.0198	.0124	.00992	.00735	.00985	.000123	.0252	.0000769	.0252	.0172	.00271	.00267	.0478	.0476	.0405	.0297
6.	.0175	.0175	.0113	.00864	.00621	.00883	.0000854	.0290	.000119	.0290	.0201	.00214	.00211	.0488	.0486	.0424	.0309
8.	.0143	.0143	.00954	.00683	.00476	.00747	.0000481	.0357	.000199	.0359	.0248	.00148	.00146	.0519	.0516	.0469	.0331
10.	.0122	.0122	.00833	.00571	.00386	.00645	.0000305	.0416	.000278	.0419	.0281	.00112	.00111	.0552	.0552	.0514	.0350
15.	.00902	.00902	.00640	.00416	.00262	.00486	.0000139	.0535	.000426	.0540	.0331	.000681	.000676	.0638	.0638	.0612	.0378
20.	.00724	.00724	.00526	.00309	.00198	.00414	.0000075	.0626	.000533	.0631	.0359	.000495	.000493	.0709	.0707	.0688	.0395
30.	.00526	.00526	.00393	.00197	.00133	.00328		.0745	.000690	.0752	.0376	.000317	.000317	.0807	.0807	.0795	.0400
40.	.00419	.00419	.00319	.00139	.00100	.00278		.0833	.000800	.0840	.0367	.000229	.000228	.0885	.0885	.0873	.0383
50.	.00350	.00350	.00269	.00106	.000804	.00243		.0890	.000888	.0900	.0359	.000178	.000178	.0935	.0935	.0928	.0371
60.	.00300	.00300	.00233	.000828	.000674	.00217		.0940	.000952	.0950	.0352	.000146	.000146	.0981	.0981	.0973	.0362
80.	.00237	.00237	.00187	.000564	.000507	.00181		.101	.00105	.102	.0338	.000106	.000106	.104	.104	.104	.0345
100.	.00197	.00197	.00156	.000421	.000407	.00155		.106	.00113	.107	.0319	.0000831	.0000831	.109	.109	.109	.0324