

Doppler Broadening and its Contribution to Compton Energy-Absorption Cross Sections: An Analysis of the Compton Component in Terms of Mass-Energy Absorption Coefficient^{a)}

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Compton energy absorption cross sections are calculated using the formulas based on a relativistic impulse approximation to assess the contribution of Doppler broadening and to examine the Compton profile literature and explore what, if any, effect our knowledge of this line broadening has on the Compton component in terms of mass-energy absorption coefficient. Compton energy-absorption cross sections are evaluated for all elements, $Z=1-100$, and for photon energies 1 keV–100 MeV. Using these cross sections, the Compton component of the mass-energy absorption coefficient is derived in the energy region from 1 keV to 1 MeV for all the elements $Z=1-100$. The electron momentum prior to the scattering event should cause a Doppler broadening of the Compton line. The momentum resolution function is evaluated in terms of incident and scattered photon energy and scattering angle. The overall momentum resolution of each contribution is estimated for x-ray and γ -ray energies of experimental interest in the angular region $1^\circ-180^\circ$. Also estimated is the Compton broadening using nonrelativistic formula in the angular region $1^\circ-180^\circ$, for 17.44, 22.1, 58.83, and 60 keV photons for a few elements (H, C, N, O, P, S, K, and Ca) of biological importance. © 2002 American Institute of Physics. [DOI: 10.1063/1.1481880]

Key words: Compton energy absorption cross section; Doppler broadening; mass energy absorption coefficient; momentum resolution and biological elements.

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1. Introduction

Compton scattered photon energy is broadened by the pre-collision motion of the bound electron resulting in Doppler broadening. It is necessary to take this binding effect into account when carrying out a precise simulation of low-energy transport. Due to the electron binding effect, a part of the broadened spectrum is suppressed and results in a reduction in the total Compton scattering cross section. A modification of the angular distribution is obtained by integrating the broadened spectrum concerning the scattered photon energy; the reduced total Compton scattering cross section is obtained by integrating the modified angular distribution of the Compton scattered photon. Compton scattering of x-ray photons is a potential tool for the determination of bone mineral content or tissue density for dose planning purposes and requires knowledge of the energy distribution of the x rays scattered through various biological materials of medical interest in the x-ray region. Compton scattering causes inner shell ionization similar to photoelectric absorption. This type of scattering cross section will also be used in other branches of physics, in which the momentum distribution of electrons in atoms, molecules, and condensed matter are studied. For example, close to excitation thresholds and in situations of small scattering angles one should expect deviations from the simple impulse approximation in the form of many-body effects, and final state effects such as in extended x-ray absorption fine structure. The motion of the atomic electrons around the atomic nucleus gives rise to a Doppler broadening of the apparent energy of the incident photon, resulting in a corresponding broadening of the Compton “modified line” for a given deflection angle of the outgoing scattered photon. The shape of this broadened line is called the “Compton profile.”¹ However, the present study is focused mainly on radiation interactions and their attenuation through a few important biological materials with radiology and the radiological sciences in mind. It is interesting to calculate the Compton component of the mass–energy absorption coefficient by means of double differential scattering cross section based on impulse approximation. Impulse approximation refers to large transfers of energy and momentum. The energy distribution is utilized in a number of ways in diagnostic radiology, for example, in determining primary photon spectra, electron densities in separate volumes, and in tomography

and imaging.² A good knowledge of the incoherent scattering cross sections is necessary in many applications, from the most mundane dosimetric and safety tasks to exotic radiation transport and attenuation in supernova models. Inbetween there are applications in medical physics, radiography, crystallography, etc.

The question has been raised, of whether incorporation of the effect of Doppler broadening on the spectrum of the Compton scattered photon should have any significant effect on the calculation of the cross section for this process, providing more accurate general purpose systematic tabulations of the mass attenuation coefficient and related quantities such as mass energy absorption coefficient.

If a monoenergetic photon beam falls on an atom in which all the electrons are at rest, the scattered photons at any given deflection angle should have the single energy predicted by the Compton and Debye formula. However, if the electrons are in motion, as we know to be the case, there is a Doppler effect related to the projected velocities of the electrons. This causes the modified (Compton line) to spread out and become a band, whose profile can then be used to determine the electron density distribution.

The impact of the Compton profile data on the computation of x-ray cross section and attenuation coefficients seems not to have been explored previously in the literature. The main task of the present work is to examine the Compton profile literature and explore what, if any effect of our knowledge of this line broadening has on theoretical computation of photon incoherent scattering cross-sections and total mass attenuation coefficients. From the above survey of measured and theoretical Compton profile data, by its very nature of being sensitive to chemical bonding by valence electrons, it would be very difficult to systematically compile “engineering type” tables, such as is now done for the mass attenuation coefficients and incoherent scattering functions for scattering and attenuation data, which depend on the bonding sensitive Compton profiles.³

Doppler broadening is important in Compton scatter imaging techniques employing gamma rays with energies below roughly 100 keV. When a gamma ray scatters from a solid at a precisely defined angle, the energy of the scattered photon is not precisely known as given by the Compton equation. Instead, the momenta of the solid’s bound electrons give rise to an energy variant probability distribution of scattered photon energies. The distribution is given by the scattering material’s Compton profile. This phenomenon has been identified as Doppler broadening of Compton scattered photons. Without inclusion of Doppler broadening, it causes loss of resolution and contrast in Compton scatter imaging systems. Compton scatter imaging devices create images using the relationship between a scattered photon’s energy and the angle as given by the Compton equation. A widely used device is the Compton scatter camera with applications in astronomy, nuclear medicine, and industry. Neglecting this Doppler broadening effect in Compton scattering will result in incorrect Compton scattering profiles in a photon excited x-ray fluorescence spectrum.

Photons from a gamma ray source Compton scatter in the inspected object and are recorded by a detector array. Knowing the size and position of both source and detector as well as the angle through which a given photon scatters allows the scattering position to be located to a region in space. The width of the distribution increases (Doppler broadening) with scattering angle and the relative width decreases with increasing incident photon energy and energies below 100 keV of the full width half maximum (FWHM) of the broadening over most of θ is greater than the FWHM resolution of most small Hp Ge detector resolutions. In view of this, the image reconstruction will be tedious with the Compton spectral data, and the measurement error may be seriously amplified in the reconstruction result. The contribution of geometrical broadening, resolution of the detector, energy broadening caused by the irradiated geometry, and Compton profile are necessary for the x-ray imaging system in order to achieve good results. It is interesting to note that, when a photon is scattered in a physical medium, the angular distribution is spread out due to geometric and nongeometric effects including depth penetration interactions, multiple scattering, and most importantly, Doppler broadening. Doppler broadening occurs due to nonzero momentum of the orbiting electron, smearing the density by as much as 10° FWHM for low energy photons. The FWHM resolution of commercially available planar Hp Ge detectors is below 500 eV. The width of the Compton broadening is on the order of several keV, and is dominant so the broadening due to detector resolution has not been treated.⁴

2. Theoretical Methods

The Compton equation assumes that the collision electron is initially unbound and at rest. However, in a real material, the momenta of the bound electrons give rise to a range of possible energies ω_2 for a fixed ω_1 and angle θ , which is referred to as Doppler broadening. The impulse approximation gives a double differential cross section for scattering at an angle θ per solid angle $d\Omega'$ and $d\omega_2$

$$\begin{aligned} (d^2\sigma/d\Omega' d\omega_2) &= \frac{r_0^2}{2} \frac{\omega_2}{\omega_1} \frac{m}{[\omega_1^2 + \omega_2^2 - 2\omega_1\omega_2 \cos \theta]^{0.5}} \\ &\times \left(\frac{\omega_1}{\omega_2} + \frac{\omega_2}{\omega_1} - \sin^2 \theta \right) J_i(P_z), \end{aligned} \quad (1)$$

where r_0 is the classical electron radius, ω_1 and ω_2 are the incident and the scattered photon energies for an electron at rest in keV, θ is the scattering angle, $J_i(P_z)$ is the Compton profile of an electron in the i th subshell, and P_z is the projection of the recoil electron momentum on the scattering vector, which bisects the incident and scattered photon vectors. The value of P_z and ω_2 are evaluated using the following expression.⁵

$$\begin{aligned} P_z &= (-137)[-\omega_1\omega_2(1 - \cos \theta)/m_0c^2 - \omega_2 + \omega_1]/ \\ &[\omega_1^2 + \omega_2^2 - 2\omega_1\omega_2 \cos \theta]^{0.5}, \end{aligned} \quad (2)$$

$$\omega_2 = \omega_1 / [1 + (\omega_1/m_0c^2)(1 - \cos \theta)]. \quad (3)$$

The whole-atom differential scattering cross section is evaluated including the number of electrons in the individual shell using the following relation:

$$(d^2\sigma/d\Omega' d\omega_2) = \sum_i N_i (d^2\sigma/d\Omega' d\omega_2)_i, \quad (4)$$

where N_i is the number of electrons in the i th subshell. The double differential Compton scattering cross-section formula, Eq. (1), in the relativistic impulse approximation is derived by Ribberfors.⁶ The cross section for the unit solid angle is defined as

$$(d\sigma/d\Omega')_{\text{inela}} = \int d\omega_2 (d^2\sigma/d\omega_2 d\Omega'). \quad (5)$$

If the occupied orbitals are $\psi_i(r)$ the Compton profile is

$$J(P_z) = \sum_i J_i(P_z), \quad (6)$$

where $J_i(P_z)$ is the contribution from each orbital.

The total Compton cross section for a specific orbital is obtained by integrating Eq. (5) over energy and solid angle intervals and may then be written as

$$\begin{aligned} \sigma_i &= \pi r_0^2 \int_0^\pi d\theta \left[\frac{\omega_c}{\omega_1} \right]^2 \left[\frac{\omega_c}{\omega_2} + \frac{\omega_1}{\omega_c} - \sin^2 \theta \right] \sin \theta \\ &\times \int_{-m}^{P_{i\text{max}}} dP_z J_i(P_z), \end{aligned} \quad (7)$$

where $P_{i\text{max}}$ is the highest P_z value for which an electron in orbital number i is able to be excited. The $P_{i\text{max}}$ is obtained by putting $\omega_2 = \omega_1 - I_i$ in Eq. (2), where I_i is the ionization of the electron in the i th orbital. The $P_{i\text{max}}$ may be positive or negative.

The scattering photons with energy ω_1 by electrons in atoms, molecules, or condensed matter will result in an energy loss ($\omega_1 - \omega_c$), where ω_2 is the energy of the scattered photon. The energy ($\omega_1 - \omega_c$) is transferred to the electron, and total energy absorption cross section per atom may be written as Carlsson *et al.*⁷ and Matscheko *et al.*⁸

$$\sigma_a = \int \int (\omega_1 - \omega_2) \frac{d^2\sigma}{d\omega_2 d\Omega'} d\omega_2 d\Omega', \quad (8)$$

where the integration is over the solid angle and the energy integration is extended to all the shells K, L, M , for all the electrons. The energy absorption cross section for the electron can be written as follows:

$$\begin{aligned} \sigma_{a_i} &= \frac{\pi r_0^2}{\omega_1} \int_{-m}^{P_{i\text{max}}} dP_z \int_0^\pi d\theta f(P_z) \frac{\omega_c}{\omega_1} \left[\frac{\omega_2}{\omega_1} \right]^2 \\ &\times \left[\frac{\omega_1}{\omega_2} + \frac{\omega_2}{\omega_1} - \sin^2 \theta \right] J_i(p_z), \end{aligned} \quad (9)$$

where ω_c is the Compton scattered photon energy, [$P_z = 0$ in Eq. (2)] and the value of $f(p_z)$ is given by

$$f(p_z) = \omega_2(\omega_1 - \omega_2) [1 + (\omega_1 \cos \theta - \omega_2) \omega_c p_z / (\omega_1^2 + \omega_2^2 - 2\omega_1\omega_2 \cos \theta)^{0.5} / \omega m]^{-1}. \quad (10)$$

In Compton scattering experiments conversion from the energy of the scattered x rays to the electron momentum can be carried out using Eq. (2). The momentum resolution may be estimated to a good approximation by using the relation

$$|\Delta P_z| = \left\{ \left[\frac{\partial p_z}{\partial \omega_1} \Delta \omega_1 \right]^2 + \left[\frac{\partial p_z}{\partial \omega_2} \Delta \omega_2 \right]^2 + \left[\frac{\partial p_z}{\partial \theta} \Delta \theta \right]^2 \right\}^{0.5}. \quad (11)$$

Here $\Delta \omega_1$ is the bandwidth determined by the monochromator, $\Delta \omega_2$ comes mainly from the position resolution of the detector, while $\Delta \theta$ comes from the variation of the scattering angle due to the energy dependent path difference of the scattered x rays through the analyzer, and from the spread of the scattering angle due to the finite size of the incident beam on the sample. Using Eq. (2), the following approximate expressions are derived with software package MATHEMATICA and the momentum resolution for each component is evaluated in the angular region 0° – 180° . The contribution of the resolution for each component is obtained using the following relations:

$$\begin{aligned} \frac{\partial p_z}{\partial \omega_1} &= -\frac{0.5(2\omega_1 - 2\cos[\theta])(-\omega_1 + \omega_2 + \frac{1}{511}(1 - \cos[\theta])\omega_1\omega_2)}{(\omega_1^2 + \omega_2^2 - 2\omega_1\omega_2\cos[\theta])^{1.5}} + \frac{-1 + \frac{1}{511}(1 - \cos[\theta])\omega_2}{(\omega_1^2 + \omega_2^2 - 2\omega_1\omega_2\cos[\theta])^{0.5}}, \\ \frac{\partial p_z}{\partial \omega_2} &= -\frac{0.5(-2\cos[\theta]\omega_1 + 2\omega_2)(-\omega_1 + \omega_2 + \frac{1}{511}(1 - \cos[\theta])\omega_1\omega_2)}{(\omega_1^2 + \omega_2^2 - 2\omega_1\omega_2\cos[\theta])^{1.5}} + \frac{1 + \frac{1}{511}(1 - \cos[\theta])\omega_1}{(\omega_1^2 + \omega_2^2 - 2\omega_1\omega_2\cos[\theta])^{0.5}}, \\ \frac{\partial p_z}{\partial \theta} &= -\frac{0.0039\sin[\theta]\omega_1^2\omega_2^2}{(\omega_1^2 + \omega_2^2 - 2\omega_1\omega_2\cos[\theta])^{1.5}} + \frac{\cos[\theta]\omega_1\omega_2}{(\omega_1^2 + \omega_2^2 - 2\omega_1\omega_2\cos[\theta])^{0.5}} + (-\omega_1 + \omega_2 + \frac{1}{511}(1 - \cos[\theta])\omega_1\omega_2) \\ &\quad \times \left(\frac{3\sin[\theta]^2\omega_1^2\omega_2^2}{(\omega_1^2 + \omega_2^2 - 2\omega_1\omega_2\cos[\theta])^{2.5}} - \frac{\cos[\theta]\omega_1\omega_2}{(\omega_1^2 + \omega_2^2 - 2\omega_1\omega_2\cos[\theta])^{1.5}} \right). \end{aligned} \quad (12)$$

The momentum resolution and the Doppler broadening at various incident photon energies of experimental interest are evaluated using Eqs. (11) and (12) in the angular region 0° – 180° .

The Compton broadening arises due to inner shells estimated analytically using the nonrelativistic formula. The momentum transfer after the Compton process can be written as follows:

$$\omega = (q^2/2m_0)$$

and

$$q = (2m_0B_i)^{0.5} \pm (2m_0T)^{0.5}. \quad (13)$$

Here m_0 is the rest mass of the electron, B_i is the binding energy ($i = K, L,$ and M shells), and T is the kinetic energy.

The geometrical broadening is estimated analytically with an angular interval of 1° at various incident photon energies using the following relation:

$$\Delta G(\omega_1) = \omega_1 m_0 c^2 [(m_0 c^2 - \omega_1 \cos \theta_{\min})^{-1} - (m_0 c^2 - \omega_1 \cos \theta_{\max})^{-1}]. \quad (14)$$

$\Delta \theta$ is evaluated from 1° to 180° and assuming θ_{\min} and θ_{\max} is symmetrically situated around $\theta = 90^\circ$.

If a monoenergetic primary photon beam is scattered through an angle (θ), an energy broadening takes place and Eq. (3) can be written as follows:

$$\begin{aligned} d\omega_2/d\theta &= (\omega_1/m_0c^2)\sin\theta[1 + (\omega_1/m_0c^2) \\ &\quad \times (1 - \cos\theta)]^{-2}. \end{aligned} \quad (15)$$

3. Results and Discussion

The Compton profile values are interpolated from the tables of Biggs *et al.*⁹ The energy absorption cross sections are estimated using Eq. (9) with the software package MATHEMATICA and the values are presented in Tables 1 and 2. The Compton mass–energy absorption coefficient is derived using the total energy absorption cross section and the values are presented in Table 3. Figure 1 shows a comparison of the present results with the standard theoretical tabulations available in the literature and deviations are observed in the low energy region. The ratio between the two theoretical compilations is <1.15 . It is interesting to note that the deviations between the two compilations in the energy region <100 keV will reflect on the current knowledge of total attenuation coefficients for low, medium, and high Z elements. The energy distribution of the photons is asymmetric at the Compton energy at low photon energies and when the energy transfers are in the vicinity of absorption edges. The cause of the discrepancies is not fully understood, but can be attributed to Doppler broadening. The effect of Compton broadening due to the momentum distribution of atomic electrons is not included in the incoherent scattering function. A 1

order of magnitude calculation is useful for estimating the Compton broadening due to precollision electron motion. At low incident photon energies after the first scattering, the x rays will be polarized and the coherent and incoherent scattering formula should include the polarization effect. With the use of improved scattering factors from impulse approximation and with the inclusion of both the polarization and Compton broadening effects, the deviations will be reduced considerably. The momentum resolution at incident and scattered photon energy and scattering angle is evaluated using Eq. (2) in the angular region $0^\circ - 180^\circ$, for few incident x-ray and γ -ray energies of experimental interest. The Doppler broadening is assessed at the scattered photon energy. The total momentum resolution can be estimated from the tables and compared with the experimental results in order to know the difference of the momentum resolution of the detector. The theoretical values evaluated using Eqs. (11) and (12) are presented in Table 4. As a byproduct, the Doppler broadening is estimated using a nonrelativistic formula, for the individual shells, for a few biological elements at various inci-

dent x-ray and γ -ray energies. The nonrelativistic theoretical estimates for Compton spreads, using Eq. (13), are presented in Table 5 and displayed graphically in Fig. 2 for a few biological elements including individual shells for 17.44 keV photons in order to determine that the contribution of the Doppler broadening arises from the individual shells. The variation of the energy and geometrical broadening evaluated using Eqs. (14) and (15) are presented in Figs. 3 and 4. The geometrical contribution is comparable to the detector energy resolution and Doppler broadening. The energy broadening is estimated around the centroid of the profile with an angular interval of 1° . The geometrical broadening is evaluated in the angular region $0^\circ - 180^\circ$, from 5 to 50 keV. The effect of Compton broadening is significant at energies below 100 keV and must be considered, since it spreads counts in the neighboring isogonic regions. In order to check the findings in detail, experimental measurements of total cross sections and energy depositions are necessary for further analysis using newly available high intensity and high energy synchrotron radiation sources.

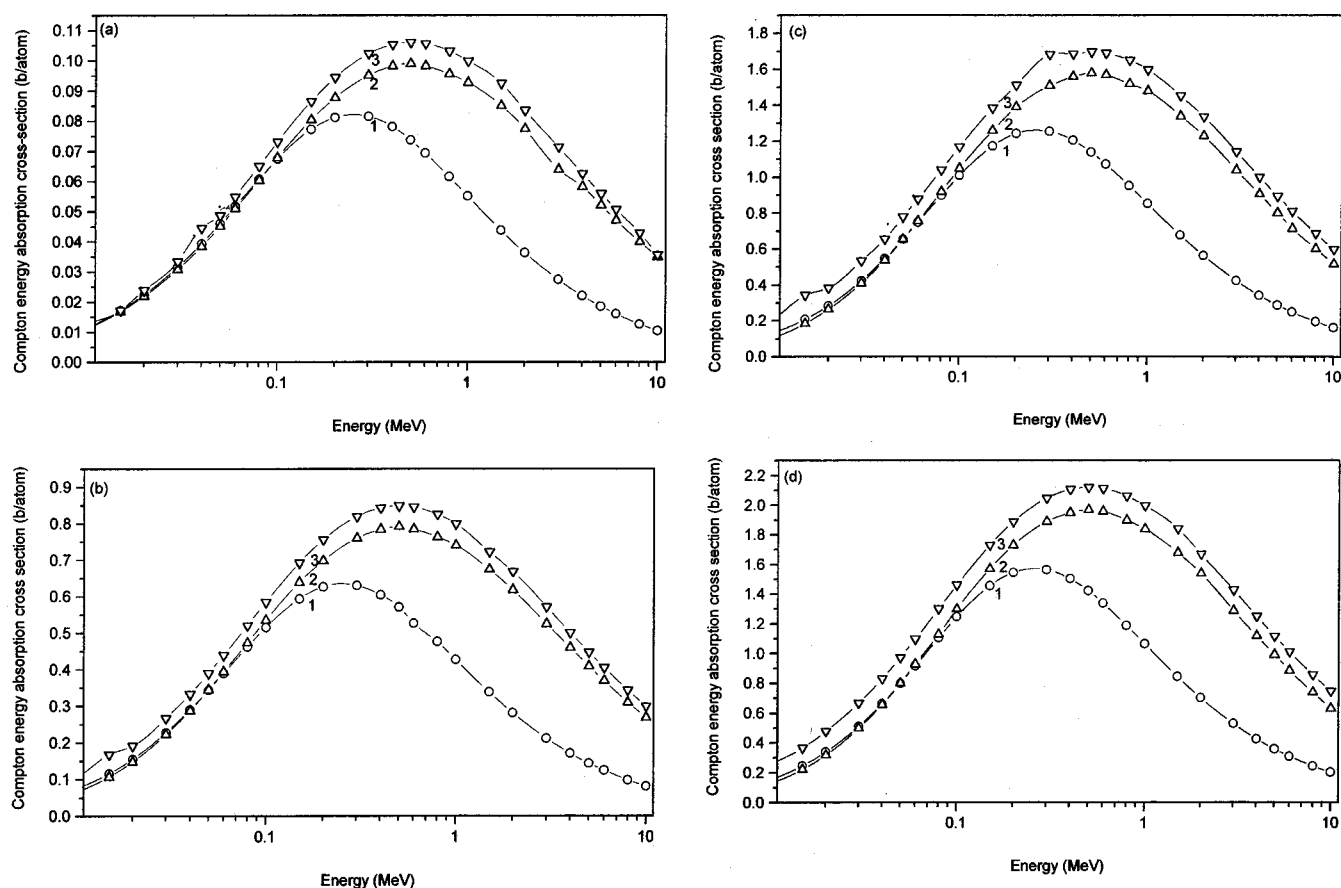


FIG. 1. A comparison of the present values with the standard theoretical estimates: (1) F. Biggs *et al.*⁹ [At. Data Nucl. Data Tables **16**, 201 (1975)]. (2) E. Storm and H. I. Israel¹⁰ [Nucl. Data Tables **A7**, 565 (1970)].

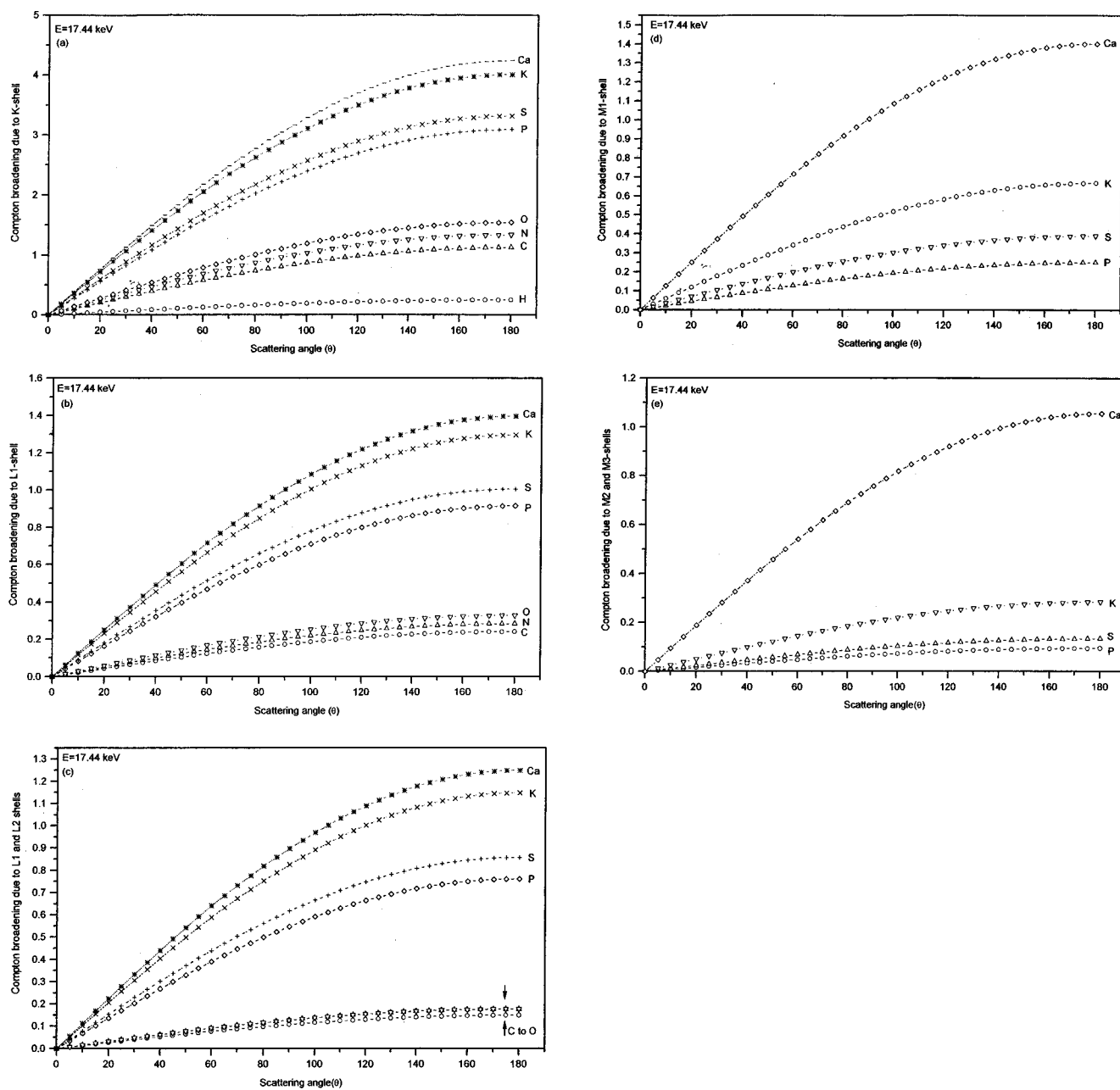


FIG. 2. The contribution of Compton broadening from *K*, *L* and *M*-shells for a few biological elements for 17.44 keV photons in the angular region 0° – 180°

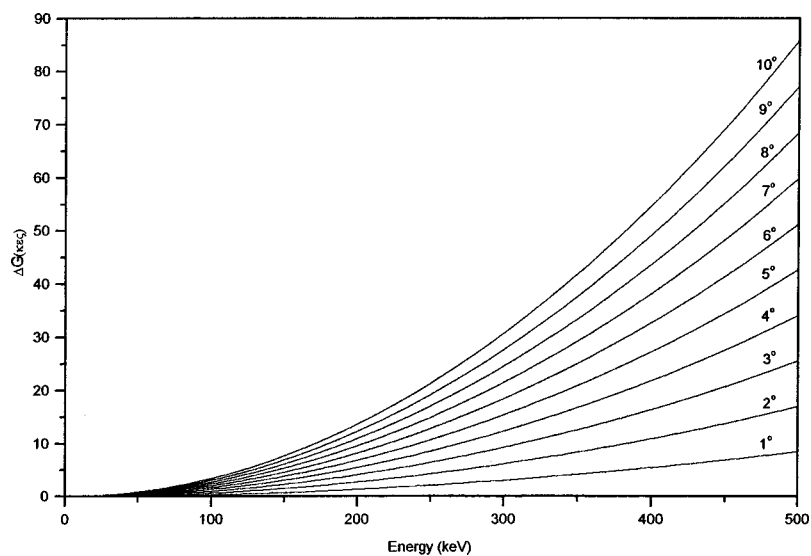


FIG. 3. Energy broadening in the angular interval of 1°, around the centroid of the peak.

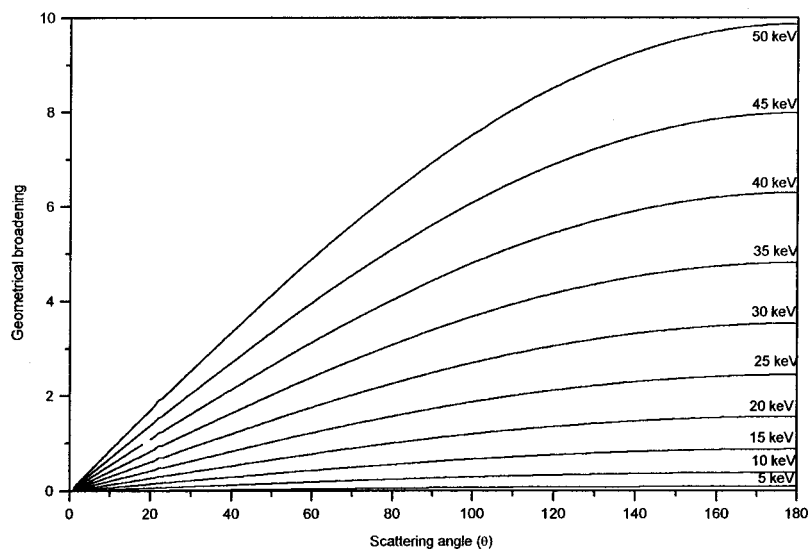


FIG. 4. Geometrical broadening in the angular region of 0°–180° with 1° interval around the centroid of the peak from 5 to 50 keV.

TABLE I. Compton energy absorption cross sections (b/atom) in the energy region 1 keV–1 MeV

| E(keV) | H | He | Li | Be | B | C | N | O | F | Ne | Na | Mg | Al | Si | P |
|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 1 | 0.0014 | 0.0280 | 0.0042 | 0.0056 | 0.0069 | 0.0083 | 0.0097 | 0.0111 | 0.0125 | 0.0139 | 0.0153 | 0.0167 | 0.0180 | 0.0194 | 0.0208 |
| 2 | 0.0028 | 0.0550 | 0.0083 | 0.0110 | 0.0138 | 0.0165 | 0.0193 | 0.0220 | 0.0248 | 0.0275 | 0.0303 | 0.0330 | 0.0358 | 0.0385 | 0.0413 |
| 3 | 0.0041 | 0.0082 | 0.0123 | 0.0164 | 0.0205 | 0.0246 | 0.0287 | 0.0328 | 0.0369 | 0.0410 | 0.0451 | 0.0492 | 0.0532 | 0.0573 | 0.0614 |
| 4 | 0.0054 | 0.0108 | 0.0163 | 0.0127 | 0.0271 | 0.0325 | 0.0379 | 0.0433 | 0.0488 | 0.0542 | 0.0596 | 0.0650 | 0.0704 | 0.0758 | 0.0813 |
| 5 | 0.0067 | 0.0134 | 0.0202 | 0.0269 | 0.0336 | 0.0403 | 0.0470 | 0.0537 | 0.0605 | 0.0672 | 0.0739 | 0.0806 | 0.0873 | 0.0940 | 0.1008 |
| 6 | 0.0080 | 0.0160 | 0.0240 | 0.0320 | 0.0400 | 0.0480 | 0.0560 | 0.0640 | 0.0720 | 0.0800 | 0.0880 | 0.0960 | 0.1040 | 0.1120 | 0.1200 |
| 7 | 0.0093 | 0.0185 | 0.0278 | 0.0370 | 0.0463 | 0.0555 | 0.0648 | 0.0740 | 0.0833 | 0.0926 | 0.1018 | 0.1111 | 0.1203 | 0.1296 | 0.1388 |
| 8 | 0.0105 | 0.0210 | 0.0315 | 0.0420 | 0.0525 | 0.0630 | 0.0735 | 0.0840 | 0.0945 | 0.1050 | 0.1154 | 0.1259 | 0.1364 | 0.1469 | 0.1574 |
| 9 | 0.0117 | 0.0234 | 0.0351 | 0.0469 | 0.0586 | 0.0703 | 0.0820 | 0.0937 | 0.1054 | 0.1171 | 0.1289 | 0.1406 | 0.1523 | 0.1640 | 0.1757 |
| 10 | 0.0129 | 0.0258 | 0.0387 | 0.0517 | 0.0646 | 0.0775 | 0.0904 | 0.1033 | 0.1162 | 0.1292 | 0.1421 | 0.1550 | 0.1679 | 0.1808 | 0.1937 |
| 20 | 0.0239 | 0.0479 | 0.0718 | 0.0958 | 0.1197 | 0.1437 | 0.1676 | 0.1915 | 0.2155 | 0.2394 | 0.2634 | 0.2873 | 0.3113 | 0.3352 | 0.3591 |
| 30 | 0.0344 | 0.0668 | 0.1002 | 0.1337 | 0.1671 | 0.2005 | 0.2339 | 0.2673 | 0.3007 | 0.3342 | 0.3676 | 0.4010 | 0.4344 | 0.4678 | 0.5012 |
| 40 | 0.0416 | 0.0832 | 0.1248 | 0.1664 | 0.2080 | 0.2496 | 0.2912 | 0.3328 | 0.3744 | 0.4160 | 0.4576 | 0.4992 | 0.5408 | 0.5824 | 0.6240 |
| 50 | 0.0487 | 0.0974 | 0.1461 | 0.1948 | 0.2435 | 0.2922 | 0.3409 | 0.3896 | 0.4383 | 0.4870 | 0.5357 | 0.5844 | 0.6331 | 0.6818 | 0.7305 |
| 60 | 0.0549 | 0.1098 | 0.1647 | 0.2196 | 0.2745 | 0.3294 | 0.3843 | 0.4392 | 0.4941 | 0.5490 | 0.6039 | 0.6588 | 0.7137 | 0.7686 | 0.8235 |
| 70 | 0.0603 | 0.1207 | 0.1810 | 0.2413 | 0.3017 | 0.3620 | 0.4223 | 0.4827 | 0.5430 | 0.6033 | 0.6637 | 0.7240 | 0.7843 | 0.8447 | 0.9050 |
| 80 | 0.0651 | 0.1302 | 0.1953 | 0.2605 | 0.3256 | 0.3907 | 0.4558 | 0.5209 | 0.5860 | 0.6511 | 0.7163 | 0.7814 | 0.8465 | 0.9116 | 0.9767 |
| 90 | 0.0693 | 0.1387 | 0.2080 | 0.2773 | 0.3467 | 0.4160 | 0.4854 | 0.5547 | 0.6240 | 0.6934 | 0.7627 | 0.8320 | 0.9014 | 0.9707 | 1.0401 |
| 100 | 0.0731 | 0.1462 | 0.2192 | 0.2923 | 0.3654 | 0.4385 | 0.5116 | 0.5846 | 0.6577 | 0.7308 | 0.8039 | 0.8770 | 0.9500 | 1.0231 | 1.0962 |
| 110 | 0.0764 | 0.1528 | 0.2292 | 0.3056 | 0.3820 | 0.4585 | 0.5349 | 0.6114 | 0.6877 | 0.7641 | 0.8405 | 0.9169 | 0.9933 | 1.0697 | 1.1461 |
| 120 | 0.0794 | 0.1588 | 0.2381 | 0.3175 | 0.3969 | 0.4763 | 0.5557 | 0.6350 | 0.7144 | 0.7938 | 0.8732 | 0.9525 | 1.0319 | 1.1113 | 1.1907 |
| 130 | 0.0820 | 0.1641 | 0.2461 | 0.3281 | 0.4102 | 0.4922 | 0.5742 | 0.6563 | 0.7383 | 0.8203 | 0.9024 | 0.9844 | 1.0665 | 1.1485 | 1.2305 |
| 140 | 0.0844 | 0.1688 | 0.2533 | 0.3377 | 0.4221 | 0.5065 | 0.5909 | 0.6753 | 0.7598 | 0.8442 | 0.9286 | 1.0130 | 1.0974 | 1.1818 | 1.2663 |
| 150 | 0.0866 | 0.1731 | 0.2597 | 0.3462 | 0.4328 | 0.5193 | 0.6059 | 0.6925 | 0.7790 | 0.8656 | 0.9521 | 1.0387 | 1.1252 | 1.2180 | 1.2984 |
| 160 | 0.0885 | 0.1770 | 0.2655 | 0.3539 | 0.4424 | 0.5309 | 0.6194 | 0.7079 | 0.7964 | 0.8849 | 0.9733 | 1.0618 | 1.1503 | 1.2388 | 1.3273 |
| 170 | 0.0902 | 0.1805 | 0.2707 | 0.3609 | 0.4511 | 0.5414 | 0.6316 | 0.7218 | 0.8120 | 0.9023 | 0.9925 | 1.0827 | 1.1729 | 1.2632 | 1.3534 |
| 180 | 0.0918 | 0.1836 | 0.2754 | 0.3672 | 0.4590 | 0.5508 | 0.6426 | 0.7344 | 0.8262 | 0.9182 | 1.0098 | 1.1016 | 1.1934 | 1.2852 | 1.3770 |
| 190 | 0.0932 | 0.1864 | 0.2797 | 0.3729 | 0.4661 | 0.5593 | 0.6526 | 0.7458 | 0.8390 | 0.9322 | 1.0254 | 1.1187 | 1.2119 | 1.3051 | 1.3983 |
| 200 | 0.0945 | 0.1890 | 0.2835 | 0.3780 | 0.4726 | 0.5671 | 0.6616 | 0.7561 | 0.8506 | 0.9451 | 1.0396 | 1.1341 | 1.2287 | 1.3232 | 1.4177 |
| 210 | 0.0957 | 0.1914 | 0.2871 | 0.3827 | 0.4784 | 0.5741 | 0.6698 | 0.7655 | 0.8612 | 0.9568 | 1.0525 | 1.1482 | 1.2439 | 1.3396 | 1.4353 |
| 220 | 0.0967 | 0.1935 | 0.2902 | 0.3870 | 0.4837 | 0.5805 | 0.6772 | 0.7740 | 0.8707 | 0.9675 | 1.0642 | 1.1610 | 1.2577 | 1.3545 | 1.4512 |
| 230 | 0.0977 | 0.1954 | 0.2931 | 0.3909 | 0.4886 | 0.5863 | 0.6840 | 0.7817 | 0.8794 | 0.9771 | 1.0749 | 1.1726 | 1.2703 | 1.3682 | 1.4657 |
| 240 | 0.0986 | 0.1972 | 0.2958 | 0.3944 | 0.4930 | 0.5916 | 0.6901 | 0.7887 | 0.8873 | 0.9859 | 1.0845 | 1.1831 | 1.2817 | 1.3803 | 1.4789 |
| 250 | 0.0994 | 0.1988 | 0.2982 | 0.3976 | 0.4970 | 0.5964 | 0.6957 | 0.7951 | 0.8945 | 0.9939 | 1.0933 | 1.1927 | 1.2921 | 1.3915 | 1.4909 |
| 260 | 0.1001 | 0.2002 | 0.3004 | 0.4005 | 0.5006 | 0.6007 | 0.7008 | 0.8010 | 0.9011 | 1.0012 | 1.1013 | 1.2014 | 1.3016 | 1.4017 | 1.5018 |
| 270 | 0.1008 | 0.2016 | 0.3023 | 0.4031 | 0.5039 | 0.6047 | 0.7055 | 0.8063 | 0.9070 | 1.0078 | 1.1086 | 1.2094 | 1.3102 | 1.4110 | 1.5117 |
| 280 | 0.1014 | 0.2028 | 0.3042 | 0.4055 | 0.5069 | 0.6083 | 0.7097 | 0.8111 | 0.9125 | 1.0138 | 1.1152 | 1.2166 | 1.3184 | 1.4194 | 1.5208 |
| 290 | 0.1019 | 0.2039 | 0.3058 | 0.4077 | 0.5097 | 0.6116 | 0.7135 | 0.8155 | 0.9174 | 1.0193 | 1.1212 | 1.2232 | 1.3251 | 1.4270 | 1.5290 |
| 300 | 0.1024 | 0.2049 | 0.3073 | 0.4097 | 0.5121 | 0.6146 | 0.7170 | 0.8194 | 0.9219 | 1.0243 | 1.1267 | 1.2291 | 1.3316 | 1.4340 | 1.5364 |
| 310 | 0.1029 | 0.2058 | 0.3086 | 0.4115 | 0.5144 | 0.6173 | 0.7202 | 0.8230 | 0.9259 | 1.0288 | 1.1317 | 1.2346 | 1.3374 | 1.4403 | 1.5432 |
| 320 | 0.1033 | 0.2066 | 0.3099 | 0.4132 | 0.5164 | 0.6197 | 0.7230 | 0.8263 | 0.9296 | 1.0329 | 1.1362 | 1.2395 | 1.3428 | 1.4460 | 1.5493 |
| 330 | 0.1037 | 0.2073 | 0.3110 | 0.4146 | 0.5183 | 0.6223 | 0.7256 | 0.8293 | 0.9329 | 1.0366 | 1.1402 | 1.2439 | 1.3476 | 1.4512 | 1.5549 |
| 340 | 0.1042 | 0.2080 | 0.3120 | 0.4160 | 0.5200 | 0.6241 | 0.7279 | 0.8319 | 0.9359 | 1.0399 | 1.1439 | 1.2479 | 1.3519 | 1.4559 | 1.5599 |
| 350 | 0.1043 | 0.2086 | 0.3129 | 0.4172 | 0.5215 | 0.6258 | 0.7300 | 0.8343 | 0.9386 | 1.0429 | 1.1472 | 1.2515 | 1.3558 | 1.4601 | 1.5644 |
| 360 | 0.1046 | 0.2091 | 0.3137 | 0.4183 | 0.5228 | 0.6274 | 0.7319 | 0.8365 | 0.9411 | 1.0456 | 1.1502 | 1.2548 | 1.3593 | 1.4639 | 1.5684 |
| 370 | 0.1048 | 0.2096 | 0.3144 | 0.4192 | 0.5240 | 0.6288 | 0.7336 | 0.8384 | 0.9432 | 1.0480 | 1.1528 | 1.2576 | 1.3625 | 1.4673 | 1.5721 |
| 380 | 0.1050 | 0.2100 | 0.3151 | 0.4201 | 0.5251 | 0.6301 | 0.7351 | 0.8402 | 0.9452 | 1.0502 | 1.1552 | 1.2602 | 1.3652 | 1.4703 | 1.5753 |
| 390 | 0.1052 | 0.2104 | 0.3156 | 0.4208 | 0.5260 | 0.6313 | 0.7365 | 0.8417 | 0.9469 | 1.0521 | 1.1573 | 1.2625 | 1.3677 | 1.4729 | 1.5781 |
| 400 | 0.1054 | 0.2108 | 0.3161 | 0.4215 | 0.5269 | 0.6323 | 0.7376 | 0.8430 | 0.9484 | 1.0538 | 1.1591 | 1.2645 | 1.3699 | 1.4753 | 1.5807 |
| 410 | 0.1055 | 0.2110 | 0.3166 | 0.4221 | 0.5276 | 0.6334 | 0.7387 | 0.8442 | 0.9497 | 1.0552 | 1.1608 | 1.2663 | 1.3718 | 1.4773 | 1.5828 |
| 420 | 0.1056 | 0.2113 | 0.3169 | 0.4226 | 0.5282 | 0.6339 | 0.7395 | 0.8452 | 0.9508 | 1.0565 | 1.1621 | 1.2678 | 1.3734 | 1.4791 | 1.5847 |
| 430 | 0.1058 | 0.2115 | 0.3173 | 0.4230 | 0.5288 | 0.6345 | 0.7403 | 0.8461 | 0.9518 | 1.0576 | 1.1633 | 1.2691 | 1.3748 | 1.4806 | 1.5864 |
| 440 | 0.1058 | 0.2117 | 0.3175 | 0.4234 | 0.5292 | 0.6351 | 0.7409 | 0.8468 | 0.9526 | 1.0585 | 1.1643 | 1.2702 | 1.3760 | 1.4819 | 1.5877 |
| 450 | 0.1059 | 0.2118 | 0.3178 | 0.4237 | 0.5296 | 0.6355 | 0.7415 | 0.8474 | 0.9533 | 1.0592 | 1.1651 | 1.2711 | 1.3770 | 1.4829 | 1.5888 |
| 460 | 0.1060 | 0.2120 | 0.3179 | 0.4239 | 0.5299 | 0.6359 | 0.7419 | 0.8479 | 0.9538 | 1.0598 | 1.1658 | 1.2718 | 1.3778 | 1.4837 | 1.5897 |
| 470 | 0.1060 | 0.2121 | 0.3181 | 0.4241 | 0.5301 | 0.6362 | 0.7422 | 0.8482 | 0.9542 | 1.0603 | 1.1663 | 1.2723 | 1.3783 | 1.4844 | 1.5904 |
| 480 | 0.1061 | 0.2121 | 0.3182 | 0.4242 | 0.5303 | 0.6363 | 0.7424 | 0.8485 | 0.9545 | 1.0606 | 1.1666 | 1.2727 | 1.3788 | 1.4848 | 1.5909 |
| 490 | 0.1061 | 0.2122 | 0.3182 | 0.4243 | 0.5304 | 0.6365 | 0.7425 | 0.8486 | 0.9547 | 1.0608 | 1.1669 | 1.2729 | 1.3790 | 1.4851 | 1.5912 |
| 500 | 0.1061 | 0.2122 | 0.3183 | 0.4243 | 0.5304 | 0.6365 | 0.7426 | 0.8487 | 0.9547 | 1.0608 | 1.1669 | 1.2730 | 1.3791 | 1.4851 | 1.5912 |
| 510 | 0.1061 | 0.2122 | 0.3182 | 0.4243 | 0.5304 | 0.6365 | 0.7426 | 0.8487 | 0.9547 | 1.0608 | 1.1669 | 1.2730 | 1.3791 | 1.4851 | 1.5912 |
| 520 | 0.1061 | 0.2121 | 0.3182 | 0.4243 | 0.5303 | 0.6364 | 0.7425 | 0.8485 | 0.9546 | 1.0607 | 1.1668 | 1.2728 | 1.3789 | 1.4850 | 1.5910 |
| 530 | 0.1060 | 0.2121 | 0.3181 | 0.4242 | 0.5302 | 0.6363 | 0.7423 | 0.8484 | 0.9544 | 1.0604 | 1.1665 | 1.2725 | 1.3786 | 1.4846 | 1.5907 |
| 540 | 0.1060 | 0.2120 | 0.3180 | 0.4240 | 0.5301 | 0.6361 | 0.7421 | 0.8481 | 0.9541 | 1.0601 | 1.1661 | 1.2721 | 1.3782 | 1.4842 | 1.5902 |
| 550 | 0.1060 | 0.2119 | 0.3179 | 0.4239 | 0.5299 | 0.6358 | 0.7418 | 0.8478 | 0.9537 | 1.0597 | 1.1657 | 1.2717 | 1.3776 | 1.4836 | 1.5896 |
| 560 | 0.1059 | 0.2118 | 0.3178 | 0.4237 | 0.5296 | 0.6355 | 0.7415 | 0.8474 | 0.9533 | 1.0592 | 1.1651 | 1.2711 | 1.3772 | 1.4829 | 1.5888 |

TABLE 1. Compton energy absorption cross sections (b/atom) in the energy region 1 keV–1 MeV—Continued

| <i>E</i> (keV) | H | He | Li | Be | B | C | N | O | F | Ne | Na | Mg | Al | Si | P |
|----------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 570 | 0.1059 | 0.2117 | 0.3176 | 0.4235 | 0.5293 | 0.6352 | 0.7411 | 0.8469 | 0.9528 | 1.0587 | 1.1645 | 1.2704 | 1.3762 | 1.4821 | 1.5880 |
| 580 | 0.1058 | 0.2116 | 0.3174 | 0.4232 | 0.5290 | 0.6348 | 0.7406 | 0.8464 | 0.9522 | 1.0580 | 1.1638 | 1.2696 | 1.3754 | 1.4812 | 1.5870 |
| 590 | 0.1057 | 0.2115 | 0.3172 | 0.4229 | 0.5287 | 0.6344 | 0.7401 | 0.8458 | 0.9516 | 1.0573 | 1.1630 | 1.2688 | 1.3745 | 1.4802 | 1.5860 |
| 600 | 0.1057 | 0.2113 | 0.3170 | 0.4226 | 0.5283 | 0.6339 | 0.7396 | 0.8452 | 0.9509 | 1.0565 | 1.1622 | 1.2678 | 1.3735 | 1.4791 | 1.5848 |
| 610 | 0.1056 | 0.2111 | 0.3167 | 0.4223 | 0.5278 | 0.6334 | 0.7390 | 0.8446 | 0.9501 | 1.0557 | 1.1613 | 1.2668 | 1.3724 | 1.4780 | 1.5835 |
| 620 | 0.1055 | 0.2110 | 0.3164 | 0.4219 | 0.5274 | 0.6329 | 0.7384 | 0.8438 | 0.9493 | 1.0548 | 1.1603 | 1.2658 | 1.3712 | 1.4767 | 1.5822 |
| 630 | 0.1054 | 0.2108 | 0.3162 | 0.4215 | 0.5269 | 0.6323 | 0.7377 | 0.8431 | 0.9485 | 1.0539 | 1.1592 | 1.2646 | 1.3700 | 1.4754 | 1.5808 |
| 640 | 0.1053 | 0.2106 | 0.3159 | 0.4211 | 0.5264 | 0.6317 | 0.7370 | 0.8423 | 0.9476 | 1.0529 | 1.1582 | 1.2634 | 1.3687 | 1.4740 | 1.5793 |
| 650 | 0.1052 | 0.2104 | 0.3155 | 0.4207 | 0.5259 | 0.6311 | 0.7363 | 0.8415 | 0.9466 | 1.0518 | 1.1570 | 1.2622 | 1.3674 | 1.4726 | 1.5777 |
| 660 | 0.1051 | 0.2101 | 0.3152 | 0.4203 | 0.5254 | 0.6304 | 0.7355 | 0.8406 | 0.9457 | 1.0507 | 1.1558 | 1.2609 | 1.3660 | 1.4710 | 1.5761 |
| 670 | 0.1050 | 0.2099 | 0.3149 | 0.4198 | 0.5248 | 0.6298 | 0.7347 | 0.8497 | 0.9446 | 1.0496 | 1.1546 | 1.2595 | 1.3645 | 1.4694 | 1.5744 |
| 680 | 0.1048 | 0.2097 | 0.3145 | 0.4194 | 0.5252 | 0.6291 | 0.7339 | 0.8387 | 0.9436 | 1.0484 | 1.1533 | 1.2581 | 1.3630 | 1.4678 | 1.5726 |
| 690 | 0.1047 | 0.2094 | 0.3142 | 0.4189 | 0.5236 | 0.6283 | 0.7331 | 0.8378 | 0.9425 | 1.0472 | 1.1519 | 1.2567 | 1.3614 | 1.4661 | 1.5708 |
| 700 | 0.1046 | 0.2092 | 0.3138 | 0.4184 | 0.5230 | 0.6276 | 0.7322 | 0.8368 | 0.9414 | 1.0460 | 1.1506 | 1.2552 | 1.3598 | 1.4664 | 1.5690 |
| 710 | 0.1045 | 0.2089 | 0.3134 | 0.4179 | 0.5223 | 0.6268 | 0.7313 | 0.8358 | 0.9402 | 1.0447 | 1.1492 | 1.2536 | 1.3581 | 1.4626 | 1.5670 |
| 720 | 0.1043 | 0.2087 | 0.3130 | 0.4174 | 0.5217 | 0.6260 | 0.7304 | 0.8347 | 0.9390 | 1.0434 | 1.1477 | 1.2421 | 1.3564 | 1.4607 | 1.5651 |
| 730 | 0.1042 | 0.2084 | 0.3126 | 0.4168 | 0.5210 | 0.6252 | 0.7294 | 0.8336 | 0.9378 | 1.0420 | 1.1462 | 1.2504 | 1.3546 | 1.4589 | 1.5631 |
| 740 | 0.1041 | 0.2081 | 0.3122 | 0.4163 | 0.5203 | 0.6244 | 0.7285 | 0.8325 | 0.9366 | 1.0407 | 1.1447 | 1.2488 | 1.3529 | 1.4569 | 1.5610 |
| 750 | 0.1039 | 0.2079 | 0.3118 | 0.4157 | 0.5196 | 0.6236 | 0.7275 | 0.8314 | 0.9353 | 1.0393 | 1.1432 | 1.2471 | 1.3510 | 1.4550 | 1.5589 |
| 760 | 0.1038 | 0.2076 | 0.3114 | 0.4151 | 0.5189 | 0.6227 | 0.7265 | 0.8303 | 0.9341 | 1.0378 | 1.1416 | 1.2454 | 1.3492 | 1.4530 | 1.5680 |
| 770 | 0.1036 | 0.2073 | 0.3109 | 0.4146 | 0.5182 | 0.6218 | 0.7255 | 0.8291 | 0.9328 | 1.0364 | 1.1400 | 1.2437 | 1.3473 | 1.4509 | 1.5546 |
| 780 | 0.1035 | 0.2070 | 0.3105 | 0.4140 | 0.5175 | 0.6210 | 0.7244 | 0.8279 | 0.9314 | 1.0349 | 1.1384 | 1.2419 | 1.3454 | 1.4489 | 1.5524 |
| 790 | 0.1033 | 0.2067 | 0.3100 | 0.4134 | 0.5167 | 0.6201 | 0.7234 | 0.8267 | 0.9301 | 1.0334 | 1.1368 | 1.2401 | 1.3435 | 1.4468 | 1.5501 |
| 800 | 0.1032 | 0.2064 | 0.3096 | 0.4128 | 0.5160 | 0.6191 | 0.7223 | 0.8255 | 0.9287 | 1.0319 | 1.1351 | 1.2383 | 1.3415 | 1.4447 | 1.5479 |
| 810 | 0.1030 | 0.2061 | 0.3091 | 0.4122 | 0.5152 | 0.6182 | 0.7213 | 0.8243 | 0.9273 | 1.0304 | 1.1334 | 1.2365 | 1.3395 | 1.4250 | 1.5456 |
| 820 | 0.1029 | 0.2058 | 0.3086 | 0.4115 | 0.5144 | 0.6173 | 0.7202 | 0.8231 | 0.9259 | 1.0288 | 1.1317 | 1.2346 | 1.3375 | 1.4404 | 1.5432 |
| 830 | 0.1027 | 0.2055 | 0.3082 | 0.4109 | 0.5136 | 0.6164 | 0.7191 | 0.8218 | 0.9245 | 1.0273 | 1.1300 | 1.2327 | 1.3354 | 1.4382 | 1.5409 |
| 840 | 0.1026 | 0.2051 | 0.3077 | 0.4103 | 0.5128 | 0.6154 | 0.7180 | 0.8205 | 0.9231 | 1.0257 | 1.1282 | 1.2308 | 1.3334 | 1.4359 | 1.5385 |
| 850 | 0.1024 | 0.2048 | 0.3072 | 0.4096 | 0.5120 | 0.6144 | 0.7169 | 0.8193 | 0.9217 | 1.0241 | 1.1265 | 1.2289 | 1.3313 | 1.4337 | 1.5361 |
| 860 | 0.1022 | 0.2045 | 0.3067 | 0.4090 | 0.5112 | 0.6135 | 0.7157 | 0.8180 | 0.9202 | 1.0225 | 1.1247 | 1.2270 | 1.3292 | 1.4314 | 1.5337 |
| 870 | 0.1021 | 0.2042 | 0.3063 | 0.4083 | 0.5104 | 0.6125 | 0.7146 | 0.8167 | 0.9188 | 1.0208 | 1.1229 | 1.2250 | 1.3271 | 1.4292 | 1.5313 |
| 880 | 0.1019 | 0.2038 | 0.3058 | 0.4077 | 0.5096 | 0.6115 | 0.7134 | 0.8154 | 0.9173 | 1.0192 | 1.1211 | 1.2230 | 1.3250 | 1.4269 | 1.5288 |
| 890 | 0.1018 | 0.2035 | 0.3053 | 0.4070 | 0.5088 | 0.6105 | 0.7123 | 0.8140 | 0.9158 | 1.0175 | 1.1193 | 1.2211 | 1.3228 | 1.4246 | 1.5263 |
| 900 | 0.1016 | 0.2032 | 0.3048 | 0.4064 | 0.5079 | 0.6095 | 0.7111 | 0.8127 | 0.9143 | 1.0159 | 1.1175 | 1.2191 | 1.3207 | 1.4222 | 1.5238 |
| 910 | 0.1014 | 0.2028 | 0.3043 | 0.4057 | 0.5071 | 0.6085 | 0.7100 | 0.8114 | 0.9128 | 1.0142 | 1.1156 | 1.2171 | 1.3185 | 1.4199 | 1.5213 |
| 920 | 0.1013 | 0.2025 | 0.3038 | 0.4050 | 0.5063 | 0.6075 | 0.7088 | 0.8100 | 0.9113 | 1.0125 | 1.1138 | 1.2150 | 1.3163 | 1.4176 | 1.5188 |
| 930 | 0.1011 | 0.2022 | 0.3033 | 0.4043 | 0.5054 | 0.6065 | 0.7076 | 0.8087 | 0.9098 | 1.0108 | 1.1119 | 1.2130 | 1.3141 | 1.4152 | 1.5163 |
| 940 | 0.1009 | 0.2018 | 0.3027 | 0.4037 | 0.5046 | 0.6055 | 0.7064 | 0.8073 | 0.9082 | 1.0092 | 1.1101 | 1.2110 | 1.3119 | 1.4128 | 1.5137 |
| 950 | 0.1007 | 0.2015 | 0.3022 | 0.4030 | 0.5037 | 0.6045 | 0.7052 | 0.8060 | 0.9067 | 1.0074 | 1.1082 | 1.2089 | 1.3097 | 1.4104 | 1.5112 |
| 960 | 0.1006 | 0.2011 | 0.3017 | 0.4023 | 0.5029 | 0.6034 | 0.7040 | 0.8046 | 0.9052 | 1.0057 | 1.1063 | 1.2069 | 1.3075 | 1.4080 | 1.5086 |
| 970 | 0.1004 | 0.2008 | 0.3012 | 0.4016 | 0.5020 | 0.6024 | 0.7028 | 0.8032 | 0.9036 | 1.0040 | 1.1044 | 1.2048 | 1.3052 | 1.4056 | 1.5060 |
| 980 | 0.1002 | 0.2005 | 0.3007 | 0.4009 | 0.5011 | 0.6014 | 0.7016 | 0.8018 | 0.9021 | 1.0023 | 1.1025 | 1.2028 | 1.3030 | 1.4032 | 1.5034 |
| 990 | 0.1001 | 0.2001 | 0.3002 | 0.4002 | 0.5003 | 0.6003 | 0.7004 | 0.8005 | 0.9005 | 1.0006 | 1.1006 | 1.2007 | 1.3007 | 1.4008 | 1.5008 |
| 1000 | 0.0999 | 0.1998 | 0.2996 | 0.3995 | 0.4994 | 0.5993 | 0.6992 | 0.7991 | 0.8989 | 0.9880 | 1.0987 | 1.1986 | 1.2985 | 1.3984 | 1.4982 |
| <i>E</i> (keV) | S | Cl | A | K | Ca | Sc | Ti | V | Cr | Mn | Fe | Co | Ni | Cu | Zn |
| 1 | 0.0222 | 0.0236 | 0.025 | 0.0264 | 0.0278 | 0.0291 | 0.0305 | 0.0319 | 0.0333 | 0.0347 | 0.0361 | 0.0375 | 0.0389 | 0.0402 | 0.0416 |
| 2 | 0.0400 | 0.0468 | 0.0496 | 0.0523 | 0.0551 | 0.0578 | 0.0606 | 0.0633 | 0.0661 | 0.0688 | 0.0716 | 0.0743 | 0.0771 | 0.0798 | 0.0826 |
| 3 | 0.0655 | 0.0696 | 0.0737 | 0.0778 | 0.0819 | 0.0860 | 0.0901 | 0.0942 | 0.0983 | 0.1024 | 0.1065 | 0.1106 | 0.1147 | 0.1188 | 0.1229 |
| 4 | 0.0867 | 0.0921 | 0.0975 | 0.1029 | 0.1083 | 0.1138 | 0.1192 | 0.1246 | 0.1300 | 0.1354 | 0.1409 | 0.1463 | 0.1517 | 0.1571 | 0.1625 |
| 5 | 0.1075 | 0.1142 | 0.1209 | 0.1276 | 0.1344 | 0.1411 | 0.1478 | 0.1545 | 0.1612 | 0.1679 | 0.1747 | 0.1814 | 0.1881 | 0.1948 | 0.2015 |
| 6 | 0.1280 | 0.1359 | 0.1439 | 0.1519 | 0.1599 | 0.1679 | 0.1759 | 0.1839 | 0.1919 | 0.1999 | 0.2079 | 0.2159 | 0.2239 | 0.2319 | 0.2399 |
| 7 | 0.1481 | 0.1574 | 0.1666 | 0.1759 | 0.1851 | 0.1944 | 0.2036 | 0.2129 | 0.2221 | 0.2314 | 0.2407 | 0.2499 | 0.2592 | 0.2684 | 0.2777 |
| 8 | 0.1679 | 0.1784 | 0.1889 | 0.1994 | 0.2099 | 0.2204 | 0.2309 | 0.2414 | 0.2519 | 0.2624 | 0.2729 | 0.2834 | 0.2939 | 0.3044 | 0.3149 |
| 9 | 0.1874 | 0.1992 | 0.2109 | 0.2226 | 0.2343 | 0.2460 | 0.2577 | 0.2694 | 0.2812 | 0.2929 | 0.3046 | 0.3163 | 0.3283 | 0.3397 | 0.3514 |
| 10 | 0.2066 | 0.2196 | 0.2325 | 0.2454 | 0.2583 | 0.2712 | 0.2841 | 0.2970 | 0.3100 | 0.3229 | 0.3358 | 0.3487 | 0.3616 | 0.3745 | 0.3875 |
| 20 | 0.3831 | 0.4070 | 0.4310 | 0.4549 | 0.4789 | 0.5028 | 0.5267 | 0.5507 | 0.5746 | 0.5986 | 0.6225 | 0.6465 | 0.6704 | 0.6943 | 0.7183 |
| 30 | 0.5346 | 0.5681 | 0.6015 | 0.6349 | 0.6683 | 0.7017 | 0.7351 | 0.7686 | 0.8021 | 0.8354 | 0.8688 | 0.9022 | 0.9356 | 0.9690 | 1.0025 |
| 40 | 0.6656 | 0.7072 | 0.7488 | 0.7904 | 0.8322 | 0.8736 | 0.9152 | 0.9568 | 0.9984 | 1.0400 | 1.0816 | 1.1231 | 1.1647 | 1.2063 | 1.2479 |
| 50 | 0.7792 | 0.8280 | 0.8767 | 0.9254 | 0.9741 | 1.0228 | 1.0715 | 1.1202 | 1.1689 | 1.2176 | 1.2663 | 1.3150 | 1.3637 | 1.4124 | 1.4611 |
| 60 | 0.8784 | 0.9333 | 0.9882 | 1.0431 | 1.0980 | 1.1529 | 1.2078 | 1.2627 | 1.3176 | 1.3725 | 1.4274 | 1.4823 | 1.5373 | 1.5922 | 1.6471 |
| 70 | 0.9653 | 1.0257 | 1.0860 | 1.1464 | 1.2067 | 1.2670 | 1.3274 | 1.3877 | 1.4480 | 1.5084 | 1.5687 | 1.6290 | 1.6894 | 1.7497 | 1.8100 |
| 80 | 1.0418 | 1.1069 | 1.1721 | 1.2372 | 1.3023 | 1.3674 | 1.4325 | 1.4976 | 1.5628 | 1.6279 | 1.6930 | 1.7581 | 1.8232 | 1.8883 | 1.9534 |
| 90 | 1.1094 | 1.1787 | 1.2481 | 1.3174 | 1.3867 | 1.4561 | 1.5254 | 1.5948 | 1.6641 | 1.7334 | 1.8028 | 1.8721 | 1.9414 | 2.0108 | 2.0801 |
| 100 | 1.1693 | 1.2424 | 1.3154 | 1.3885 | 1.4616 | 1.5347 | 1.6078 | 1.6808 | 1.7539 | 1.8270 | 1.9001 | 1.9732 | 2.0463 | 2.1193 | 2.1924 |

TABLE I. Compton energy absorption cross sections (b/atom) in the energy region 1 keV–1 MeV—Continued

| E(keV) | S | Cl | A | K | Ca | Sc | Ti | V | Cr | Mn | Fe | Co | Ni | Cu | Zn |
|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 110 | 1.2225 | 1.2990 | 1.3754 | 1.4518 | 1.5282 | 1.6046 | 1.6810 | 1.7574 | 1.8338 | 1.9102 | 1.9866 | 2.0631 | 2.1395 | 2.2159 | 2.2923 |
| 120 | 1.2701 | 1.3494 | 1.4288 | 1.5082 | 1.5876 | 1.6670 | 1.7463 | 1.8257 | 1.9051 | 1.9845 | 2.0638 | 2.1432 | 2.2226 | 2.3020 | 2.3814 |
| 130 | 1.3126 | 1.3946 | 1.4766 | 1.5587 | 1.6407 | 1.7227 | 1.8048 | 1.8868 | 1.9688 | 2.0509 | 2.1329 | 2.2149 | 2.2970 | 2.3790 | 2.4610 |
| 140 | 1.3507 | 1.4351 | 1.5195 | 1.6039 | 1.6883 | 1.7728 | 1.8572 | 1.9416 | 2.0260 | 2.1104 | 2.1948 | 2.2793 | 2.3637 | 2.4481 | 2.5325 |
| 150 | 1.3849 | 1.4715 | 1.5581 | 1.6446 | 1.7312 | 1.8177 | 1.9043 | 1.9908 | 2.0774 | 2.1639 | 2.2505 | 2.3371 | 2.4236 | 2.5102 | 2.5967 |
| 160 | 1.4158 | 1.5043 | 1.5927 | 1.6812 | 1.7697 | 1.8582 | 1.9467 | 2.0352 | 2.1237 | 2.2121 | 2.3006 | 2.3891 | 2.4776 | 2.5661 | 2.6546 |
| 170 | 1.4436 | 1.5338 | 1.6241 | 1.7143 | 1.8045 | 1.8947 | 1.9850 | 2.0752 | 2.1654 | 2.2556 | 2.3459 | 2.4361 | 2.5263 | 2.6165 | 2.7068 |
| 180 | 1.4688 | 1.5606 | 1.6524 | 1.7442 | 1.8360 | 1.9278 | 2.0196 | 2.1114 | 2.2032 | 2.2950 | 2.3868 | 2.4786 | 2.5704 | 2.6622 | 2.7539 |
| 190 | 1.4916 | 1.5848 | 1.6780 | 1.7712 | 1.8644 | 1.9577 | 2.0509 | 2.1441 | 2.2373 | 2.3306 | 2.4238 | 2.5170 | 2.6102 | 2.7034 | 2.7967 |
| 200 | 1.5122 | 1.6067 | 1.7012 | 1.7957 | 1.8902 | 1.9848 | 2.0793 | 2.1738 | 2.2683 | 2.3628 | 2.4573 | 2.5518 | 2.6463 | 2.7409 | 2.8354 |
| 210 | 1.5309 | 1.6266 | 1.7223 | 1.8180 | 1.9137 | 2.0094 | 2.1050 | 2.2007 | 2.2964 | 2.3921 | 2.4878 | 2.5835 | 2.6791 | 2.7748 | 2.8705 |
| 220 | 1.5480 | 1.6447 | 1.7414 | 1.8382 | 1.9349 | 2.0317 | 2.1284 | 2.2252 | 2.3219 | 2.4187 | 2.5154 | 2.6122 | 2.7089 | 2.8057 | 2.9024 |
| 230 | 1.5634 | 1.6611 | 1.7588 | 1.8566 | 1.9543 | 2.0520 | 2.1497 | 2.2474 | 2.3451 | 2.4428 | 2.5406 | 2.6383 | 2.7360 | 2.8337 | 2.9313 |
| 240 | 1.5775 | 1.6761 | 1.7747 | 1.8733 | 1.9719 | 2.0704 | 2.1690 | 2.2676 | 2.3662 | 2.4646 | 2.5634 | 2.6620 | 2.7606 | 2.8592 | 2.9578 |
| 250 | 1.5903 | 1.6897 | 1.7891 | 1.8885 | 1.9879 | 2.0872 | 2.1866 | 2.2860 | 2.3854 | 2.4848 | 2.5842 | 2.6836 | 2.7830 | 2.8824 | 2.9818 |
| 260 | 1.6019 | 1.7023 | 1.8022 | 1.9023 | 2.0024 | 2.1025 | 2.2026 | 2.3028 | 2.4029 | 2.5030 | 2.6031 | 2.7032 | 2.8034 | 2.9035 | 3.0036 |
| 270 | 1.6125 | 1.7133 | 1.8141 | 1.9149 | 2.0156 | 2.1164 | 2.2172 | 2.3180 | 2.4188 | 2.5196 | 2.6203 | 2.7211 | 2.8219 | 2.9227 | 3.0235 |
| 280 | 1.6221 | 1.7235 | 1.8249 | 1.9263 | 2.0277 | 2.1291 | 2.2305 | 2.3318 | 2.4322 | 2.5346 | 2.6360 | 2.7374 | 2.8388 | 2.9401 | 3.0415 |
| 290 | 1.6309 | 1.7328 | 1.8348 | 1.9367 | 2.0386 | 2.1406 | 2.2425 | 2.3444 | 2.4464 | 2.5483 | 2.6502 | 2.7522 | 2.8541 | 2.9560 | 3.0579 |
| 300 | 1.6389 | 1.7413 | 1.8437 | 1.9461 | 2.0486 | 2.1510 | 2.2534 | 2.3559 | 2.4583 | 2.5607 | 2.6631 | 2.7656 | 2.8680 | 2.9704 | 3.0729 |
| 310 | 1.6461 | 1.7490 | 1.8518 | 1.9547 | 2.0576 | 2.1605 | 2.2634 | 2.3662 | 2.4691 | 2.5720 | 2.6749 | 2.7778 | 2.8806 | 2.9835 | 3.0864 |
| 320 | 1.6526 | 1.7559 | 1.8592 | 1.9625 | 2.0658 | 2.1691 | 2.2723 | 2.3756 | 2.4789 | 2.5822 | 2.6855 | 2.7888 | 2.8921 | 2.9954 | 3.0987 |
| 330 | 1.6585 | 1.7662 | 1.8695 | 1.9695 | 2.0732 | 2.1768 | 2.2805 | 2.3841 | 2.4878 | 2.5915 | 2.6951 | 2.7988 | 2.9024 | 3.0061 | 3.1098 |
| 340 | 1.6639 | 1.7679 | 1.8719 | 1.9759 | 2.0798 | 2.1838 | 2.2878 | 2.3918 | 2.4958 | 2.5998 | 2.7038 | 2.8078 | 2.9118 | 3.0158 | 3.1198 |
| 350 | 1.6686 | 1.7730 | 1.8773 | 1.9816 | 2.0859 | 2.1901 | 2.2944 | 2.3987 | 2.5030 | 2.6073 | 2.7116 | 2.8159 | 2.9202 | 3.0245 | 3.1288 |
| 360 | 1.6730 | 1.7776 | 1.8821 | 1.9867 | 2.0913 | 2.1958 | 2.3004 | 2.4049 | 2.5095 | 2.6141 | 2.7186 | 2.8232 | 2.9278 | 3.0323 | 3.1369 |
| 370 | 1.6769 | 1.7817 | 1.8865 | 1.9913 | 2.0961 | 2.2009 | 2.3057 | 2.4105 | 2.5153 | 2.6201 | 2.7249 | 2.8297 | 2.9345 | 3.0393 | 3.1441 |
| 380 | 1.6803 | 1.7853 | 1.8903 | 1.9954 | 2.1004 | 2.2054 | 2.3104 | 2.4154 | 2.5205 | 2.6255 | 2.7305 | 2.8355 | 2.9405 | 3.0455 | 3.1506 |
| 390 | 1.6833 | 1.7886 | 1.8938 | 1.9990 | 2.1042 | 2.2094 | 2.3146 | 2.4198 | 2.5251 | 2.6302 | 2.7354 | 2.8406 | 2.9459 | 3.0511 | 3.1563 |
| 400 | 1.6860 | 1.7914 | 1.8968 | 2.0022 | 2.1075 | 2.2129 | 2.3183 | 2.4237 | 2.5290 | 2.6344 | 2.7398 | 2.8452 | 2.9505 | 3.0559 | 3.1613 |
| 410 | 1.6884 | 1.7939 | 1.8994 | 2.0049 | 2.1105 | 2.2160 | 2.3215 | 2.4270 | 2.5325 | 2.6381 | 2.7436 | 2.8491 | 2.9546 | 3.0602 | 3.1657 |
| 420 | 1.6904 | 1.7960 | 1.9017 | 2.0073 | 2.1130 | 2.2186 | 2.3243 | 2.4299 | 2.5356 | 2.6412 | 2.7469 | 2.8525 | 2.9582 | 3.0638 | 3.1695 |
| 430 | 1.6921 | 1.7979 | 1.9036 | 2.0094 | 2.1151 | 2.2209 | 2.3267 | 2.4324 | 2.5382 | 2.6439 | 2.7497 | 2.8554 | 2.9612 | 3.0670 | 3.1727 |
| 440 | 1.6936 | 1.7994 | 1.9053 | 2.0111 | 2.1170 | 2.2228 | 2.3286 | 2.4345 | 2.5403 | 2.6462 | 2.7520 | 2.8579 | 2.9637 | 3.0696 | 3.1754 |
| 450 | 1.6948 | 1.8007 | 1.9066 | 2.0125 | 2.1184 | 2.2244 | 2.3303 | 2.4362 | 2.5421 | 2.6481 | 2.7540 | 2.8599 | 2.9658 | 3.0717 | 3.1777 |
| 460 | 1.6957 | 1.8017 | 1.9077 | 2.0136 | 2.1196 | 2.2256 | 2.3316 | 2.4376 | 2.5436 | 2.6495 | 2.7555 | 2.8615 | 2.9675 | 3.0735 | 3.1794 |
| 470 | 1.6964 | 1.8024 | 1.9085 | 2.0145 | 2.1205 | 2.2266 | 2.3326 | 2.4386 | 2.5446 | 2.6507 | 2.7567 | 2.8627 | 2.9687 | 3.0748 | 3.1808 |
| 480 | 1.6969 | 1.8030 | 1.9090 | 2.0151 | 2.1212 | 2.2272 | 2.3333 | 2.4393 | 2.5454 | 2.6515 | 2.7575 | 2.8636 | 2.9696 | 3.0757 | 3.1817 |
| 490 | 1.6972 | 1.8033 | 1.9094 | 2.0155 | 2.1216 | 2.2276 | 2.3337 | 2.4398 | 2.5459 | 2.6519 | 2.7580 | 2.8641 | 2.9702 | 3.0762 | 3.1823 |
| 500 | 1.6974 | 1.8034 | 1.9095 | 2.0156 | 2.1217 | 2.2278 | 2.3339 | 2.4400 | 2.5460 | 2.6521 | 2.7582 | 2.8643 | 2.9704 | 3.0765 | 3.1826 |
| 510 | 1.6973 | 1.8034 | 1.9095 | 2.0156 | 2.1216 | 2.2277 | 2.3338 | 2.4399 | 2.5460 | 2.6520 | 2.7581 | 2.8642 | 2.9703 | 3.0764 | 3.1825 |
| 520 | 1.6971 | 1.8032 | 1.9092 | 2.0153 | 2.1214 | 2.2274 | 2.3335 | 2.4396 | 2.5456 | 2.6517 | 2.7578 | 2.8638 | 2.9699 | 3.0760 | 3.1820 |
| 530 | 1.6967 | 1.8028 | 1.9088 | 2.0149 | 2.1209 | 2.2269 | 2.3330 | 2.4390 | 2.5451 | 2.6511 | 2.7572 | 2.8632 | 2.9693 | 3.0753 | 3.1813 |
| 540 | 1.6962 | 1.8022 | 1.9082 | 2.0142 | 2.1202 | 2.2263 | 2.3323 | 2.4383 | 2.5443 | 2.6503 | 2.7563 | 2.8623 | 2.9683 | 3.0744 | 3.1804 |
| 550 | 1.6955 | 1.8015 | 1.9075 | 2.0135 | 2.1194 | 2.2254 | 2.3314 | 2.4373 | 2.5433 | 2.6493 | 2.7553 | 2.8612 | 2.9672 | 3.0732 | 3.1791 |
| 560 | 1.6948 | 1.8007 | 1.9066 | 2.0125 | 2.1184 | 2.2244 | 2.3303 | 2.4362 | 2.5421 | 2.6480 | 2.7540 | 2.8599 | 2.9658 | 3.0717 | 3.1777 |
| 570 | 1.6938 | 1.7997 | 1.9056 | 2.0114 | 2.1173 | 2.2232 | 2.3290 | 2.4349 | 2.5408 | 2.6466 | 2.7525 | 2.8584 | 2.9642 | 3.0701 | 3.1760 |
| 580 | 1.6928 | 1.7986 | 1.9044 | 2.0102 | 2.1160 | 2.2218 | 2.3276 | 2.4334 | 2.5392 | 2.6450 | 2.7508 | 2.8566 | 2.9624 | 3.0682 | 3.1740 |
| 590 | 1.6917 | 1.7974 | 1.9031 | 2.0089 | 2.1146 | 2.2203 | 2.3261 | 2.4318 | 2.5375 | 2.6433 | 2.7490 | 2.8547 | 2.9604 | 3.0662 | 3.1719 |
| 600 | 1.6904 | 1.7961 | 1.9018 | 2.0074 | 2.1131 | 2.2187 | 2.3244 | 2.4300 | 2.5357 | 2.6413 | 2.7470 | 2.8526 | 2.9583 | 3.0639 | 3.1696 |
| 610 | 1.6891 | 1.7947 | 1.9003 | 2.0058 | 2.1114 | 2.2173 | 2.3225 | 2.4281 | 2.5337 | 2.6392 | 2.7448 | 2.8504 | 2.9559 | 3.0615 | 3.1671 |
| 620 | 1.6877 | 1.7932 | 1.8986 | 2.0041 | 2.1096 | 2.2151 | 2.3206 | 2.4260 | 2.5315 | 2.6370 | 2.7425 | 2.8480 | 2.9535 | 3.0589 | 3.1644 |
| 630 | 1.6862 | 1.7916 | 1.8969 | 2.0023 | 2.1077 | 2.2131 | 2.3185 | 2.4239 | 2.5293 | 2.6347 | 2.7400 | 2.8454 | 2.9508 | 3.0562 | 3.1616 |
| 640 | 1.6846 | 1.7899 | 1.8952 | 2.0004 | 2.1057 | 2.2110 | 2.3163 | 2.4216 | 2.5269 | 2.6322 | 2.7374 | 2.8427 | 2.9480 | 3.0533 | 3.1586 |
| 650 | 1.6829 | 1.7881 | 1.8933 | 1.9850 | 2.1036 | 2.2088 | 2.3140 | 2.4192 | 2.5244 | 2.6296 | 2.7347 | 2.8399 | 2.9451 | 3.0503 | 3.1555 |
| 660 | 1.6812 | 1.7862 | 1.8913 | 1.9964 | 2.1015 | 2.2065 | 2.3116 | 2.4167 | 2.5218 | 2.6268 | 2.7319 | 2.8374 | 2.9421 | 3.0471 | 3.1522 |
| 670 | 1.6794 | 1.7843 | 1.8893 | 1.9942 | 2.0992 | 2.2042 | 2.3091 | 2.4141 | 2.5190 | 2.6240 | 2.7290 | 2.8339 | 2.9389 | 3.0438 | 3.1488 |
| 680 | 1.6775 | 1.7823 | 1.8872 | 1.9920 | 2.0969 | 2.2017 | 2.3065 | 2.4114 | 2.5162 | 2.6211 | 2.7259 | 2.8308 | 2.9356 | 3.0404 | 3.1453 |
| 690 | 1.6756 | 1.7803 | 1.8850 | 1.9897 | 2.0944 | 2.1992 | 2.3039 | 2.4086 | 2.5133 | 2.6180 | 2.7228 | 2.8275 | 2.9322 | 3.0369 | 3.1417 |
| 700 | 1.6736 | 1.7782 | 1.8828 | 1.9873 | 2.0919 | 2.1965 | 2.3011 | 2.4057 | 2.5103 | 2.6149 | 2.7195 | 2.8241 | 2.9287 | 3.0333 | 3.1379 |
| 710 | 1.6715 | 1.7760 | 1.8804 | 1.9849 | 2.0894 | 2.1939 | 2.2983 | 2.4028 | 2.5073 | 2.6117 | 2.7162 | 2.8207 | 2.9251 | 3.0296 | 3.1341 |
| 720 | 1.6694 | 1.7737 | 1.8781 | 1.9824 | 2.0868 | 2.1911 | 2.2954 | 2.3998 | 2.5041 | 2.6084 | 2.7128 | 2.8171 | 2.9215 | 3.0258 | 3.1301 |
| 730 | 1.6673 | 1.7715 | 1.8757 | 1.9799 | 2.0841 | 2.1883 | 2.2925 | 2.3967 | 2.5009 | 2.6051 | 2.7093 | 2.8135 | 2.9177 | 3.0219 | 3.1261 |
| 740 | 1.6651 | 1.7691 | 1.8732 | 1.9773 | 2.0813 | 2.1854 | 2.2895 | 2.3935 | 2.4976 | 2.6017 | 2.7057 | 2.8098 | 2.9139 | 3.0179 | 3.1220 |
| 750 | 1.6628 | 1.7667 | 1.8707 | 1.9746 | 2.0785 | 2.1825 | 2.2864 | 2.3903 | 2.4942 | 2.5982 | 2.7021 | 2.8060 | 2.9099 | 3.0139 | 3.1178 |

TABLE 1. Compton energy absorption cross sections (b/atom) in the energy region 1 keV–1 MeV—Continued

| E(keV) | S | Cl | A | K | Ca | Sc | Ti | V | Cr | Mn | Fe | Co | Ni | Cu | Zn |
|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 760 | 1.6605 | 1.7643 | 1.8681 | 1.9719 | 2.0757 | 2.1795 | 2.2832 | 2.3874 | 2.4908 | 2.5946 | 2.6984 | 2.8022 | 2.9060 | 3.0097 | 3.1135 |
| 770 | 1.6582 | 1.7619 | 1.8655 | 1.9691 | 2.0728 | 2.1764 | 2.2801 | 2.3837 | 2.4873 | 2.5910 | 2.6946 | 2.7983 | 2.9019 | 3.0055 | 3.1092 |
| 780 | 1.6559 | 1.7594 | 1.8629 | 1.9663 | 2.0698 | 2.1733 | 2.2768 | 2.3803 | 2.4838 | 2.5873 | 2.6908 | 2.7943 | 2.8978 | 3.0013 | 3.1048 |
| 790 | 1.6535 | 1.7568 | 1.8602 | 1.9635 | 2.0668 | 2.1702 | 2.2735 | 2.3769 | 2.4802 | 2.5836 | 2.6869 | 2.7902 | 2.8936 | 2.9969 | 3.1003 |
| 800 | 1.6511 | 1.7542 | 1.8574 | 1.9606 | 2.0638 | 2.1670 | 2.2702 | 2.3734 | 2.4766 | 2.5798 | 2.6830 | 2.7862 | 2.8894 | 2.9925 | 3.0957 |
| 810 | 1.6486 | 1.7516 | 1.8547 | 1.9577 | 2.0608 | 2.1638 | 2.2668 | 2.3699 | 2.4729 | 2.5759 | 2.6790 | 2.7820 | 2.8851 | 2.9881 | 3.0911 |
| 820 | 1.6461 | 1.7490 | 1.8519 | 1.9548 | 2.0577 | 2.1605 | 2.2634 | 2.3663 | 2.4692 | 2.5721 | 2.6750 | 2.7778 | 2.8807 | 2.9836 | 3.0865 |
| 830 | 1.6436 | 1.7463 | 1.8491 | 1.9518 | 2.0545 | 2.1572 | 2.2600 | 2.3627 | 2.4654 | 2.5681 | 2.6709 | 2.7736 | 2.8763 | 2.9791 | 3.0818 |
| 840 | 1.6411 | 1.7436 | 1.8462 | 1.9488 | 2.0514 | 2.1539 | 2.2565 | 2.3591 | 2.4616 | 2.5642 | 2.6668 | 2.7693 | 2.8719 | 2.9745 | 3.0770 |
| 850 | 1.6385 | 1.7409 | 1.8433 | 1.9457 | 2.0482 | 2.1506 | 2.2530 | 2.3554 | 2.4578 | 2.5602 | 2.6626 | 2.7650 | 2.8674 | 2.9698 | 3.0722 |
| 860 | 1.6359 | 1.7382 | 1.8404 | 1.9427 | 2.0449 | 2.1472 | 2.2494 | 2.3517 | 2.4539 | 2.5562 | 2.6584 | 2.7607 | 2.8629 | 2.9651 | 3.0674 |
| 870 | 1.6333 | 1.7354 | 1.8375 | 1.9396 | 2.0417 | 2.1438 | 2.2458 | 2.3479 | 2.4500 | 2.5521 | 2.6542 | 2.7563 | 2.8583 | 2.9604 | 3.0625 |
| 880 | 1.6307 | 1.7326 | 1.8346 | 1.9365 | 2.0384 | 2.1403 | 2.2422 | 2.3442 | 2.4461 | 2.5480 | 2.6499 | 2.7518 | 2.8538 | 2.9557 | 3.0576 |
| 890 | 1.6281 | 1.7298 | 1.8316 | 1.9333 | 2.0351 | 2.1369 | 2.2386 | 2.3404 | 2.4421 | 2.5439 | 2.6456 | 2.7474 | 2.8491 | 2.9509 | 3.0526 |
| 900 | 1.6254 | 1.7270 | 1.8286 | 1.9302 | 2.0318 | 2.1334 | 2.235 | 2.3365 | 2.4381 | 2.5397 | 2.6413 | 2.7429 | 2.8445 | 2.9461 | 3.0477 |
| 910 | 1.6227 | 1.7242 | 1.8256 | 1.9270 | 2.0284 | 2.1299 | 2.2313 | 2.3327 | 2.4341 | 2.5255 | 2.6370 | 2.7384 | 2.8398 | 2.9412 | 3.0427 |
| 920 | 1.6201 | 1.7213 | 1.8226 | 1.9238 | 2.0251 | 2.1263 | 2.2276 | 2.3288 | 2.4301 | 2.5313 | 2.6326 | 2.7339 | 2.8351 | 2.9364 | 3.0376 |
| 930 | 1.6174 | 1.7184 | 1.8195 | 1.9206 | 2.0217 | 2.1228 | 2.2239 | 2.3250 | 2.4260 | 2.5271 | 2.6282 | 2.7293 | 2.8304 | 2.9315 | 3.0325 |
| 940 | 1.6146 | 1.7156 | 1.8165 | 1.9174 | 2.0183 | 2.1192 | 2.2201 | 2.3210 | 2.4220 | 2.5229 | 2.6238 | 2.7247 | 2.8256 | 2.9265 | 3.0275 |
| 950 | 1.6119 | 1.7127 | 1.8134 | 1.9141 | 2.0149 | 2.1156 | 2.2164 | 2.3171 | 2.4179 | 2.5186 | 2.6194 | 2.7201 | 2.8209 | 2.9216 | 3.0223 |
| 960 | 1.6092 | 1.7097 | 1.8103 | 1.9109 | 2.0115 | 2.1120 | 2.2126 | 2.3132 | 2.4138 | 2.5143 | 2.6149 | 2.7155 | 2.8161 | 2.9166 | 3.0172 |
| 970 | 1.6064 | 1.7068 | 1.8072 | 1.9076 | 2.0080 | 2.1084 | 2.2088 | 2.3092 | 2.4096 | 2.5100 | 2.6104 | 2.7108 | 2.8112 | 2.9116 | 3.0121 |
| 980 | 1.6037 | 1.7039 | 1.8041 | 1.9044 | 2.0046 | 2.1048 | 2.2050 | 2.3053 | 2.4055 | 2.5057 | 2.6060 | 2.7062 | 2.8064 | 2.9066 | 3.0069 |
| 990 | 1.6009 | 1.7010 | 1.8010 | 1.9011 | 2.0011 | 2.1012 | 2.2012 | 2.3013 | 2.4014 | 2.5014 | 2.6015 | 2.7015 | 2.8016 | 2.9016 | 3.0017 |
| 1000 | 1.5981 | 1.6980 | 1.7979 | 1.8978 | 1.9977 | 2.0975 | 2.1974 | 2.2973 | 2.3972 | 2.4971 | 2.5970 | 2.6968 | 2.7967 | 2.8966 | 2.9965 |

| E(keV) | Ga | Ge | S | Se | Br | Kr | Rb | Sr | Y | Zr | Nb | Mo | Tc | Ru | Rh |
|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 1 | 0.0430 | 0.0444 | 0.0458 | 0.0472 | 0.0486 | 0.0500 | 0.0513 | 0.0527 | 0.0541 | 0.0555 | 0.0569 | 0.0583 | 0.0597 | 0.0611 | 0.0624 |
| 2 | 0.0853 | 0.0881 | 0.0908 | 0.0936 | 0.0963 | 0.0910 | 0.1019 | 0.1046 | 0.1074 | 0.1101 | 0.1129 | 0.1156 | 0.1184 | 0.1211 | 0.1239 |
| 3 | 0.1270 | 0.1311 | 0.1352 | 0.1393 | 0.1434 | 0.1475 | 0.1515 | 0.1556 | 0.1597 | 0.1638 | 0.1679 | 0.1720 | 0.1761 | 0.1802 | 0.1843 |
| 4 | 0.1679 | 0.1734 | 0.1778 | 0.1842 | 0.1896 | 0.1950 | 0.2004 | 0.2059 | 0.2113 | 0.2167 | 0.2221 | 0.2275 | 0.2329 | 0.2384 | 0.2438 |
| 5 | 0.2082 | 0.2150 | 0.2217 | 0.2284 | 0.2351 | 0.2418 | 0.2485 | 0.2553 | 0.2620 | 0.2687 | 0.2754 | 0.2821 | 0.2889 | 0.2956 | 0.3023 |
| 6 | 0.2479 | 0.2559 | 0.2639 | 0.2719 | 0.2799 | 0.2879 | 0.2959 | 0.3039 | 0.3119 | 0.3199 | 0.3279 | 0.3359 | 0.3439 | 0.3519 | 0.3599 |
| 7 | 0.2869 | 0.2962 | 0.3055 | 0.3147 | 0.3240 | 0.3332 | 0.3425 | 0.3517 | 0.3610 | 0.3702 | 0.3795 | 0.3888 | 0.3980 | 0.4073 | 0.4165 |
| 8 | 0.3254 | 0.3358 | 0.3463 | 0.3568 | 0.3673 | 0.3778 | 0.3883 | 0.3988 | 0.4093 | 0.4198 | 0.4303 | 0.4408 | 0.4513 | 0.4618 | 0.4723 |
| 9 | 0.3632 | 0.3749 | 0.3866 | 0.3983 | 0.4100 | 0.4217 | 0.4334 | 0.4452 | 0.4569 | 0.4686 | 0.4803 | 0.4920 | 0.5037 | 0.5155 | 0.5272 |
| 10 | 0.4004 | 0.4133 | 0.4262 | 0.4391 | 0.4520 | 0.4649 | 0.4779 | 0.4908 | 0.5037 | 0.5166 | 0.5295 | 0.5424 | 0.5554 | 0.5683 | 0.5812 |
| 20 | 0.7422 | 0.7662 | 0.7901 | 0.8141 | 0.8380 | 0.8619 | 0.8859 | 0.9098 | 0.9338 | 0.9577 | 0.9817 | 1.0056 | 1.0295 | 1.0535 | 1.0774 |
| 30 | 1.0359 | 1.0693 | 1.1027 | 1.1361 | 1.1695 | 1.2030 | 1.2364 | 1.2698 | 1.3032 | 1.3366 | 1.3700 | 1.4034 | 1.4369 | 1.4703 | 1.5037 |
| 40 | 1.2895 | 1.3311 | 1.3727 | 1.4143 | 1.4559 | 1.4975 | 1.5391 | 1.5807 | 1.6233 | 1.6639 | 1.7055 | 1.7431 | 1.7887 | 1.8303 | 1.8719 |
| 50 | 1.5098 | 1.5585 | 1.6072 | 1.6559 | 1.7046 | 1.7533 | 1.8020 | 1.8507 | 1.8994 | 1.9481 | 1.9968 | 2.0455 | 2.0942 | 2.1429 | 2.1916 |
| 60 | 1.7020 | 1.7569 | 1.8118 | 1.8667 | 1.9216 | 1.9765 | 2.0314 | 2.0863 | 2.1412 | 2.1961 | 2.2510 | 2.3059 | 2.3608 | 2.4157 | 2.4706 |
| 70 | 1.8704 | 1.9307 | 1.9910 | 2.0514 | 2.1117 | 2.1720 | 2.2324 | 2.2927 | 2.3530 | 2.4134 | 2.4737 | 2.5340 | 2.5944 | 2.6547 | 2.7150 |
| 80 | 2.0186 | 2.0837 | 2.1488 | 2.2139 | 2.2790 | 2.3441 | 2.4092 | 2.4744 | 2.5395 | 2.6046 | 2.6697 | 2.7348 | 2.7999 | 2.8650 | 2.9302 |
| 90 | 2.1495 | 2.2188 | 2.2881 | 2.3575 | 2.4268 | 2.4961 | 2.5655 | 2.6348 | 2.7042 | 2.7735 | 2.8428 | 2.9122 | 2.9815 | 3.0508 | 3.1202 |
| 100 | 2.2655 | 2.3386 | 2.4117 | 2.4847 | 2.5578 | 2.6309 | 2.7040 | 2.7771 | 2.8501 | 2.9232 | 2.9963 | 3.0694 | 3.1425 | 3.2155 | 3.2886 |
| 110 | 2.3687 | 2.4451 | 2.5215 | 2.5979 | 2.6743 | 2.7507 | 2.8271 | 2.9036 | 2.9800 | 3.0564 | 3.1328 | 3.2092 | 3.2856 | 3.3620 | 3.4384 |
| 120 | 2.4607 | 2.5401 | 2.6195 | 2.6989 | 2.7783 | 2.8576 | 2.9370 | 3.0164 | 3.0958 | 3.1752 | 3.2545 | 3.3339 | 3.4133 | 3.4927 | 3.5720 |
| 130 | 2.5431 | 2.6251 | 2.7022 | 2.7892 | 2.8712 | 2.9533 | 3.0353 | 3.1173 | 3.1994 | 3.2814 | 3.3634 | 3.4455 | 3.5275 | 3.6095 | 3.6916 |
| 140 | 2.6169 | 2.7013 | 2.7858 | 2.8702 | 2.9546 | 3.0390 | 3.1234 | 3.2078 | 3.2923 | 3.3767 | 3.4611 | 3.5455 | 3.6299 | 3.7143 | 3.7988 |
| 150 | 2.6833 | 2.7698 | 2.8564 | 2.9430 | 3.0295 | 3.1161 | 3.2026 | 3.2892 | 3.3757 | 3.4623 | 3.5489 | 3.6354 | 3.7220 | 3.8085 | 3.8951 |
| 160 | 2.7431 | 2.8315 | 2.9200 | 3.0085 | 3.0970 | 3.1855 | 3.2740 | 3.3625 | 3.4509 | 3.5394 | 3.6279 | 3.7164 | 3.8049 | 3.8934 | 3.9819 |
| 170 | 2.7970 | 2.8872 | 2.9774 | 3.0677 | 3.1579 | 3.2481 | 3.3383 | 3.4286 | 3.5188 | 3.6090 | 3.6992 | 3.7895 | 3.8797 | 3.9699 | 4.0602 |
| 180 | 2.8457 | 2.9375 | 3.0293 | 3.1211 | 3.2129 | 3.3047 | 3.3965 | 3.4883 | 3.5801 | 3.6719 | 3.7637 | 3.8555 | 3.9473 | 4.0391 | 4.1309 |
| 190 | 2.8899 | 2.9831 | 3.0763 | 3.1695 | 3.2628 | 3.3560 | 3.4492 | 3.5424 | 3.6357 | 3.7289 | 3.8221 | 3.9153 | 4.0085 | 4.1018 | 4.1950 |
| 200 | 2.9299 | 3.0244 | 3.1189 | 3.2134 | 3.3079 | 3.4024 | 3.4970 | 3.5915 | 3.6860 | 3.7805 | 3.8750 | 3.9695 | 4.0640 | 4.1585 | 4.2431 |
| 210 | 2.9662 | 3.0619 | 3.1576 | 3.2532 | 3.3489 | 3.4446 | 3.5403 | 3.6360 | 3.7317 | 3.8273 | 3.9230 | 4.0187 | 4.1144 | 4.2101 | 4.3058 |
| 220 | 2.9992 | 3.0959 | 3.1927 | 3.2894 | 3.3861 | 3.4829 | 3.5796 | 3.6764 | 3.7731 | 3.8699 | 3.9666 | 4.0634 | 4.1601 | 4.2569 | 4.3536 |
| 230 | 3.0291 | 3.1268 | 3.2246 | 3.3223 | 3.4200 | 3.5177 | 3.6154 | 3.7131 | 3.8108 | 3.9085 | 4.0063 | 4.1040 | 4.2017 | 4.2994 | 4.3971 |
| 240 | 3.0564 | 3.1550 | 3.2536 | 3.3522 | 3.4507 | 3.5493 | 3.6479 | 3.7465 | 3.8451 | 3.9437 | 4.0423 | 4.1409 | 4.2395 | 4.3381 | 4.4367 |
| 250 | 3.0812 | 3.1806 | 3.2800 | 3.3793 | 3.4787 | 3.5781 | 3.6775 | 3.7769 | 3.8763 | 3.9757 | 4.0751 | 4.1745 | 4.2739 | 4.3733 | 4.4727 |
| 260 | 3.1037 | 3.2038 | 3.3040 | 3.4041 | 3.5042 | 3.6043 | 3.7044 | 3.8046 | 3.9047 | 4.0048 | 4.1049 | 4.2050 | 4.3052 | 4.4053 | 4.5054 |
| 270 | 3.1242 | 3.2250 | 3.3258 | 3.4266 | 3.5274 | 3.6282 | 3.7289 | 3.8297 | 3.9305 | 4.0313 | 4.1321 | 4.2329 | 4.3336 | 4.4344 | 4.5352 |
| 280 | 3.1429 | 3.2443 | 3.3457 | 3.4471 | 3.5484 | 3.6498 | 3.7512 | 3.8526 | 3.9540 | 4.0554 | 4.1568 | 4.2581 | 4.3595 | 4.4609 | 4.5623 |
| 290 | 3.1599 | 3.2618 | 3.3637 | 3.4657 | 3.5676 | 3.6695 | 3.7715 | 3.8734 | 3.9753 | 4.0773 | 4.1792 | 4.2811 | 4.3831 | 4.4850 | 4.5869 |

TABLE 1. Compton energy absorption cross sections (b/atom) in the energy region 1 keV–1 MeV—Continued

| <i>E</i> (keV) | Ga | Ge | S | Se | Br | Kr | Rb | Sr | Y | Zr | Nb | Mo | Tc | Ru | Rh |
|----------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 300 | 3.1753 | 3.2777 | 3.3801 | 3.4826 | 3.5850 | 3.6874 | 3.7899 | 3.8923 | 3.9947 | 4.0971 | 4.1996 | 4.3020 | 4.4044 | 4.5069 | 4.6093 |
| 310 | 3.1893 | 3.2922 | 3.3950 | 3.4979 | 3.6008 | 3.7037 | 3.8066 | 3.9094 | 4.0123 | 4.1152 | 4.2181 | 4.3210 | 4.4238 | 4.5267 | 4.6296 |
| 320 | 3.2019 | 3.3052 | 3.4085 | 3.5118 | 3.6151 | 3.7184 | 3.8217 | 3.9250 | 4.0283 | 4.1315 | 4.2348 | 4.3381 | 4.4414 | 4.5447 | 4.6480 |
| 330 | 3.2134 | 3.3171 | 3.4207 | 3.5244 | 3.6280 | 3.7317 | 3.8354 | 3.9390 | 4.0427 | 4.1463 | 4.2500 | 4.3537 | 4.4573 | 4.5610 | 4.6646 |
| 340 | 3.2238 | 3.3278 | 3.4317 | 3.5357 | 3.6397 | 3.7437 | 3.8477 | 3.9517 | 4.0557 | 4.1597 | 4.2637 | 4.3677 | 4.4717 | 4.5757 | 4.6797 |
| 350 | 3.2331 | 3.3374 | 3.4417 | 3.5460 | 3.6502 | 3.7545 | 3.8588 | 3.9631 | 4.0674 | 4.1717 | 4.2760 | 4.3803 | 4.4846 | 4.5889 | 4.6932 |
| 360 | 3.2414 | 3.3460 | 3.4506 | 3.5551 | 3.6597 | 3.7643 | 3.8688 | 3.9734 | 4.0779 | 4.1825 | 4.2871 | 4.3916 | 4.4962 | 4.6008 | 4.7053 |
| 370 | 3.2489 | 3.3537 | 3.4585 | 3.5633 | 3.6681 | 3.7729 | 3.8777 | 3.9826 | 4.0874 | 4.1922 | 4.2970 | 4.4018 | 4.5066 | 4.6114 | 4.7162 |
| 380 | 3.2556 | 3.3606 | 3.4656 | 3.5706 | 3.6757 | 3.7807 | 3.8857 | 3.9907 | 4.0957 | 4.2008 | 4.3058 | 4.4108 | 4.5158 | 4.6208 | 4.7258 |
| 390 | 3.2615 | 3.3667 | 3.4719 | 3.5771 | 3.6823 | 3.7875 | 3.8927 | 3.9979 | 4.1032 | 4.2084 | 4.3136 | 4.4188 | 4.5240 | 4.6292 | 4.7344 |
| 400 | 3.2667 | 3.3721 | 3.4774 | 3.5828 | 3.6882 | 3.7936 | 3.8939 | 4.0043 | 4.1097 | 4.2151 | 4.3204 | 4.4258 | 4.5312 | 4.6366 | 4.7420 |
| 410 | 3.2712 | 3.3767 | 3.4823 | 3.5878 | 3.6933 | 3.7988 | 3.9043 | 4.0099 | 4.1154 | 4.2209 | 4.3264 | 4.4320 | 4.5375 | 4.6430 | 4.7485 |
| 420 | 3.2751 | 3.3808 | 3.4864 | 3.5921 | 3.6977 | 3.8034 | 3.9090 | 4.0147 | 4.1203 | 4.2260 | 4.3316 | 4.4373 | 4.5429 | 4.6486 | 4.7542 |
| 430 | 3.2785 | 3.3842 | 3.4900 | 3.5927 | 3.7015 | 3.8073 | 3.9130 | 4.0188 | 4.1245 | 4.2303 | 4.3360 | 4.4418 | 4.5476 | 4.6533 | 4.7591 |
| 440 | 3.2813 | 3.3871 | 3.4930 | 3.5988 | 3.7047 | 3.8105 | 3.9164 | 4.0222 | 4.1281 | 4.2339 | 4.3398 | 4.4456 | 4.5514 | 4.6573 | 4.7631 |
| 450 | 3.2836 | 3.3895 | 3.4954 | 3.6014 | 3.7073 | 3.8132 | 3.9191 | 4.0250 | 4.1310 | 4.2369 | 4.3428 | 4.4487 | 4.5546 | 4.6606 | 4.7665 |
| 460 | 3.2854 | 3.3914 | 3.4974 | 3.6034 | 3.7093 | 3.8153 | 3.9213 | 4.0273 | 4.1333 | 4.2393 | 4.3452 | 4.4512 | 4.5572 | 4.6632 | 4.7692 |
| 470 | 3.2868 | 3.3928 | 3.4989 | 3.6049 | 3.7109 | 3.8170 | 3.9230 | 4.0290 | 4.1350 | 4.2411 | 4.3471 | 4.4531 | 4.5591 | 4.6652 | 4.7712 |
| 480 | 3.2878 | 3.3939 | 3.4999 | 3.6060 | 3.7120 | 3.8181 | 3.9242 | 4.0302 | 4.1363 | 4.2423 | 4.3484 | 4.4544 | 4.5605 | 4.6666 | 4.7726 |
| 490 | 3.2884 | 3.3945 | 3.5006 | 3.6066 | 3.7127 | 3.8188 | 3.9249 | 4.0309 | 4.1370 | 4.2431 | 4.3492 | 4.4553 | 4.5613 | 4.6674 | 4.7735 |
| 500 | 3.2886 | 3.3947 | 3.5008 | 3.6069 | 3.7130 | 3.8191 | 3.9252 | 4.0312 | 4.1373 | 4.2434 | 4.3495 | 4.4556 | 4.5617 | 4.6678 | 4.7738 |
| 510 | 3.2885 | 3.3946 | 3.5007 | 3.6068 | 3.7129 | 3.8189 | 3.9250 | 4.0311 | 4.1372 | 4.2433 | 4.3494 | 4.4554 | 4.5615 | 4.6676 | 4.7737 |
| 520 | 3.2881 | 3.3942 | 3.5003 | 3.6063 | 3.7124 | 3.8185 | 3.9245 | 4.0306 | 4.1367 | 4.2427 | 4.3488 | 4.4549 | 4.5609 | 4.6700 | 4.7731 |
| 530 | 3.2874 | 3.3934 | 3.4995 | 3.6055 | 3.7116 | 3.8176 | 3.9237 | 4.0297 | 4.1357 | 4.2418 | 4.3478 | 4.4539 | 4.5599 | 4.6660 | 4.7720 |
| 540 | 3.2864 | 3.3924 | 3.4984 | 3.6044 | 3.7104 | 3.8164 | 3.9225 | 4.0285 | 4.1345 | 4.2405 | 4.3465 | 4.4525 | 4.5585 | 4.6645 | 4.7706 |
| 550 | 3.2851 | 3.3911 | 3.4970 | 3.6030 | 3.7090 | 3.8150 | 3.9209 | 4.0269 | 4.1329 | 4.2388 | 4.3448 | 4.4508 | 4.5568 | 4.6270 | 4.7687 |
| 560 | 3.2836 | 3.3895 | 3.4954 | 3.6013 | 3.7073 | 3.8132 | 3.9191 | 4.0250 | 4.1310 | 4.2369 | 4.3428 | 4.4487 | 4.5546 | 4.6606 | 4.7665 |
| 570 | 3.2818 | 3.3877 | 3.4935 | 3.5994 | 3.7053 | 3.8111 | 3.9170 | 4.0229 | 4.1287 | 4.2346 | 4.3405 | 4.4463 | 4.5522 | 4.6581 | 4.7639 |
| 580 | 3.2798 | 3.3856 | 3.4914 | 3.5972 | 3.7030 | 3.8088 | 3.9146 | 4.0204 | 4.1262 | 4.2320 | 4.3378 | 4.4436 | 4.5494 | 4.6552 | 4.7610 |
| 590 | 3.2776 | 3.3834 | 3.4891 | 3.5948 | 3.7006 | 3.8063 | 3.9120 | 4.0177 | 4.1235 | 4.2292 | 4.3349 | 4.4407 | 4.5464 | 4.6521 | 4.7579 |
| 600 | 3.2752 | 3.3809 | 3.4865 | 3.5922 | 3.6978 | 3.8035 | 3.9092 | 4.0148 | 4.1205 | 4.2261 | 4.3318 | 4.4374 | 4.5431 | 4.6487 | 4.7544 |
| 610 | 3.2727 | 3.3782 | 3.4838 | 3.5894 | 3.6949 | 3.8005 | 3.9061 | 4.0116 | 4.1172 | 4.2228 | 4.3283 | 4.4339 | 4.5395 | 4.6451 | 4.7506 |
| 620 | 3.2699 | 3.3754 | 3.4809 | 3.5863 | 3.6918 | 3.7973 | 3.9028 | 4.0083 | 4.1137 | 4.2192 | 4.3247 | 4.4302 | 4.5357 | 4.6411 | 4.7466 |
| 630 | 3.2670 | 3.3724 | 3.4777 | 3.5831 | 3.6885 | 3.7939 | 3.8993 | 4.0047 | 4.1101 | 4.2154 | 4.3208 | 4.4262 | 4.5316 | 4.6370 | 4.7424 |
| 640 | 3.2639 | 3.3692 | 3.4745 | 3.5797 | 3.6850 | 3.7903 | 3.8956 | 4.0009 | 4.1062 | 4.2115 | 4.3167 | 4.4220 | 4.5273 | 4.6326 | 4.7379 |
| 650 | 3.2606 | 3.3658 | 3.4710 | 3.5762 | 3.6814 | 3.7866 | 3.8917 | 3.9969 | 4.1021 | 4.2073 | 4.3125 | 4.4177 | 4.5228 | 4.6280 | 4.7332 |
| 660 | 3.2573 | 3.3623 | 3.4674 | 3.5725 | 3.6776 | 3.7826 | 3.8877 | 3.9928 | 4.0979 | 4.2029 | 4.3080 | 4.4131 | 4.5182 | 4.6232 | 4.7283 |
| 670 | 3.2538 | 3.3587 | 3.4637 | 3.5686 | 3.6736 | 3.7786 | 3.8835 | 3.9885 | 4.0934 | 4.1984 | 4.3034 | 4.4083 | 4.5133 | 4.6182 | 4.7232 |
| 680 | 3.2501 | 3.3550 | 3.4598 | 3.5647 | 3.6695 | 3.7743 | 3.8792 | 3.9840 | 4.0889 | 4.1937 | 4.2986 | 4.4034 | 4.5082 | 4.6131 | 4.7179 |
| 690 | 3.2464 | 3.3511 | 3.4558 | 3.5605 | 3.6653 | 3.7700 | 3.8747 | 3.9794 | 4.0842 | 4.1889 | 4.2936 | 4.3983 | 4.5030 | 4.6078 | 4.7125 |
| 700 | 3.2425 | 3.3471 | 3.4517 | 3.5563 | 3.6609 | 3.7655 | 3.8701 | 3.9747 | 4.0793 | 4.1839 | 4.2885 | 4.3931 | 4.4977 | 4.6023 | 4.7069 |
| 710 | 3.2385 | 3.3430 | 3.4475 | 3.5520 | 3.6564 | 3.7609 | 3.8654 | 3.9698 | 4.0743 | 4.1788 | 4.2832 | 4.3877 | 4.4922 | 4.5966 | 4.7011 |
| 720 | 3.2345 | 3.3388 | 3.4432 | 3.5475 | 3.6518 | 3.7562 | 3.8605 | 3.9648 | 4.0692 | 4.1735 | 4.2779 | 4.3822 | 4.4865 | 4.5909 | 4.6952 |
| 730 | 3.2303 | 3.3345 | 3.4387 | 3.5429 | 3.6471 | 3.7513 | 3.8555 | 3.9597 | 4.0639 | 4.1681 | 4.2723 | 4.3766 | 4.4808 | 4.5850 | 4.6892 |
| 740 | 3.2261 | 3.3301 | 3.4342 | 3.5383 | 3.6423 | 3.7464 | 3.8505 | 3.9545 | 4.0586 | 4.1627 | 4.2667 | 4.3708 | 4.4749 | 4.5789 | 4.6830 |
| 750 | 3.2217 | 3.3256 | 3.4296 | 3.5335 | 3.6374 | 3.7414 | 3.8453 | 3.9492 | 4.0531 | 4.1571 | 4.2610 | 4.3649 | 4.4688 | 4.5728 | 4.6767 |
| 760 | 3.2173 | 3.3211 | 3.4249 | 3.5287 | 3.6324 | 3.7362 | 3.8400 | 3.9438 | 4.0476 | 4.1514 | 4.2551 | 4.3589 | 4.4627 | 4.5650 | 4.6703 |
| 770 | 3.2128 | 3.3164 | 3.4201 | 3.5237 | 3.6274 | 3.7310 | 3.8346 | 3.9383 | 4.0419 | 4.1456 | 4.2492 | 4.3528 | 4.4565 | 4.5601 | 4.6658 |
| 780 | 3.2082 | 3.3117 | 3.4152 | 3.5187 | 3.6222 | 3.7257 | 3.8292 | 3.9327 | 4.0362 | 4.1397 | 4.2432 | 4.3467 | 4.4501 | 4.5536 | 4.6571 |
| 790 | 3.2036 | 3.3070 | 3.4103 | 3.5136 | 3.6170 | 3.7203 | 3.8237 | 3.9270 | 4.0304 | 4.1337 | 4.2370 | 4.3404 | 4.4437 | 4.5471 | 4.6504 |
| 800 | 3.1989 | 3.3021 | 3.4053 | 3.5085 | 3.6117 | 3.7149 | 3.8181 | 3.9213 | 4.0245 | 4.1276 | 4.2308 | 4.3340 | 4.4372 | 4.5404 | 4.6436 |
| 810 | 3.1942 | 3.2972 | 3.4002 | 3.5033 | 3.6063 | 3.7094 | 3.8124 | 3.9154 | 4.0185 | 4.1215 | 4.2246 | 4.3276 | 4.4306 | 4.5337 | 4.6367 |
| 820 | 3.1894 | 3.2922 | 3.3951 | 3.4980 | 3.6009 | 3.7038 | 3.8067 | 3.9095 | 4.0124 | 4.1153 | 4.2182 | 4.3211 | 4.4240 | 4.5268 | 4.6297 |
| 830 | 3.1845 | 3.2872 | 3.3900 | 3.4927 | 3.5954 | 3.6981 | 3.8009 | 3.9036 | 4.0063 | 4.1090 | 4.2118 | 4.3145 | 4.4172 | 4.5199 | 4.6227 |
| 840 | 3.1796 | 3.2822 | 3.3847 | 3.4873 | 3.5899 | 3.6924 | 3.7950 | 3.8976 | 4.0001 | 4.1027 | 4.2053 | 4.3078 | 4.4104 | 4.5130 | 4.6155 |
| 850 | 3.1746 | 3.2770 | 3.3795 | 3.4819 | 3.5843 | 3.6867 | 3.7891 | 3.8915 | 3.9939 | 4.0963 | 4.1987 | 4.3011 | 4.4035 | 4.5059 | 4.6083 |
| 860 | 3.1696 | 3.2719 | 3.3741 | 3.4764 | 3.5786 | 3.6809 | 3.7831 | 3.8854 | 3.9876 | 4.0899 | 4.1921 | 4.2943 | 4.3966 | 4.4988 | 4.6011 |
| 870 | 3.1646 | 3.2667 | 3.3688 | 3.4708 | 3.5729 | 3.6750 | 3.7771 | 3.8792 | 3.9813 | 4.0834 | 4.1854 | 4.2875 | 4.3896 | 4.4917 | 4.5938 |
| 880 | 3.1595 | 3.2614 | 3.3634 | 3.4653 | 3.5672 | 3.6691 | 3.7710 | 3.8730 | 3.9749 | 4.0768 | 4.1787 | 4.2806 | 4.3826 | 4.4845 | 4.5864 |
| 890 | 3.1544 | 3.2562 | 3.3579 | 3.4597 | 3.5614 | 3.6632 | 3.7649 | 3.8667 | 3.9684 | 4.0702 | 4.1720 | 4.2737 | 4.3755 | 4.4772 | 4.5790 |
| 900 | 3.1493 | 3.2508 | 3.3524 | 3.4540 | 3.5556 | 3.6572 | 3.7588 | 3.8604 | 3.9620 | 4.0636 | 4.1651 | 4.2667 | 4.3683 | 4.4699 | 4.5715 |
| 910 | 3.1441 | 3.2455 | 3.3469 | 3.4483 | 3.5498 | 3.6512 | 3.7526 | 3.8540 | 3.9554 | 4.0569 | 4.1583 | 4.2597 | 4.3611 | 4.4626 | 4.5640 |
| 920 | 3.1389 | 3.2401 | 3.3414 | 3.4426 | 3.5439 | 3.6451 | 3.7464 | 3.8476 | 3.9489 | 4.0501 | 4.1514 | 4.2527 | 4.3539 | 4.4552 | 4.5564 |
| 930 | 3.1336 | 3.2347 | 3.3358 | 3.4369 | 3.5380 | 3.6391 | 3.7401 | 3.8412 | 3.9423 | 4.0434 | 4.1445 | 4.2456 | 4.3466 | 4.4477 | 4.5488 |
| 940 | 3.1284 | 3.2293 | 3.3302 | 3.4311 | 3.5320 | 3.6329 | 3.7339 | 3.8348 | 3.9357 | 4.0366 | 4.1375 | 4.2384 | 4.3394 | 4.4403 | 4.5412 |

TABLE 1. Compton energy absorption cross sections (b/atom) in the energy region 1 keV–1 MeV—Continued

| <i>E</i> (keV) | Ga | Ge | S | Se | Br | Kr | Rb | Sr | Y | Zr | Nb | Mo | Tc | Ru | Rh |
|----------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 950 | 3.1231 | 3.2238 | 3.3246 | 3.4253 | 3.5261 | 3.6268 | 3.7276 | 3.8283 | 3.9290 | 4.0298 | 4.1305 | 4.2313 | 4.3320 | 4.4328 | 5.5335 |
| 960 | 3.1178 | 3.2184 | 3.3189 | 3.4195 | 3.5201 | 3.6206 | 3.7212 | 3.8218 | 3.9224 | 4.0229 | 4.1235 | 4.2241 | 4.3247 | 4.4252 | 4.5258 |
| 970 | 3.1125 | 3.2129 | 3.3133 | 3.4137 | 3.5141 | 3.6145 | 3.7149 | 3.8153 | 3.9157 | 4.0161 | 4.1165 | 4.2169 | 4.3173 | 4.4177 | 4.5181 |
| 980 | 3.1071 | 3.2073 | 3.3076 | 3.4078 | 3.5080 | 3.6083 | 3.7085 | 3.8087 | 3.9089 | 4.0092 | 4.1094 | 4.2096 | 4.3099 | 4.4101 | 4.5103 |
| 990 | 3.1017 | 3.2018 | 3.3019 | 3.4019 | 3.5020 | 3.6020 | 3.7021 | 3.8021 | 3.9022 | 4.0023 | 4.1023 | 4.2024 | 4.3024 | 4.4025 | 4.5025 |
| 1000 | 3.0961 | 3.1963 | 3.2961 | 3.3960 | 3.4959 | 3.5958 | 3.6957 | 3.7956 | 3.8954 | 3.9953 | 4.0952 | 4.1951 | 4.2950 | 4.3949 | 4.4927 |
| <i>E</i> (keV) | Pd | Ag | Cd | In | Sn | Sb | Te | I | Xe | Cs | Ba | La | Ce | Pr | Nd |
| 1 | 0.0638 | 0.0652 | 0.0666 | 0.0680 | 0.0694 | 0.0708 | 0.0722 | 0.0735 | 0.0749 | 0.0763 | 0.0777 | 0.0791 | 0.0805 | 0.0819 | 0.0833 |
| 2 | 0.0126 | 0.1294 | 0.1321 | 0.1349 | 0.1376 | 0.1404 | 0.1431 | 0.1459 | 0.1487 | 0.1514 | 0.1542 | 0.1569 | 0.1597 | 0.1624 | 0.1652 |
| 3 | 0.1884 | 0.1925 | 0.1966 | 0.2007 | 0.2048 | 0.2089 | 0.2130 | 0.2171 | 0.2212 | 0.2253 | 0.2294 | 0.2335 | 0.2376 | 0.2417 | 0.2458 |
| 4 | 0.2492 | 0.2546 | 0.2600 | 0.2654 | 0.2709 | 0.2763 | 0.2817 | 0.2871 | 0.2925 | 0.2980 | 0.3034 | 0.3088 | 0.3142 | 0.3196 | 0.3250 |
| 5 | 0.3090 | 0.3157 | 0.3224 | 0.3292 | 0.3359 | 0.3426 | 0.3493 | 0.3560 | 0.3627 | 0.3695 | 0.3762 | 0.3829 | 0.3896 | 0.3963 | 0.4031 |
| 6 | 0.3679 | 0.3759 | 0.3839 | 0.3919 | 0.3999 | 0.4078 | 0.4158 | 0.4238 | 0.4318 | 0.4398 | 0.4478 | 0.4558 | 0.4638 | 0.4718 | 0.4798 |
| 7 | 0.4258 | 0.4350 | 0.4443 | 0.4535 | 0.4628 | 0.4721 | 0.4813 | 0.4906 | 0.4998 | 0.5091 | 0.5183 | 0.5276 | 0.5369 | 0.5461 | 0.5554 |
| 8 | 0.4828 | 0.4933 | 0.5038 | 0.5143 | 0.5248 | 0.5353 | 0.5458 | 0.5562 | 0.5667 | 0.5772 | 0.5877 | 0.5982 | 0.6087 | 0.6192 | 0.6297 |
| 9 | 0.5389 | 0.5506 | 0.5623 | 0.5740 | 0.5857 | 0.5975 | 0.6092 | 0.6209 | 0.6326 | 0.6443 | 0.6560 | 0.6677 | 0.6795 | 0.6912 | 0.7029 |
| 10 | 0.5941 | 0.6070 | 0.6199 | 0.6328 | 0.6458 | 0.6587 | 0.6716 | 0.6845 | 0.6974 | 0.7103 | 0.7233 | 0.7362 | 0.7491 | 0.7620 | 0.7749 |
| 20 | 1.1014 | 1.1253 | 1.1493 | 1.1732 | 1.1971 | 1.2211 | 1.2450 | 1.2690 | 1.2929 | 1.3169 | 1.3408 | 1.3647 | 1.3887 | 1.4126 | 1.4366 |
| 30 | 1.5371 | 1.5705 | 1.6039 | 1.6374 | 1.6708 | 1.7042 | 1.7376 | 1.7710 | 1.8044 | 1.8379 | 1.8713 | 1.9047 | 1.9381 | 1.9715 | 2.0049 |
| 40 | 1.9135 | 1.9551 | 1.9967 | 2.0383 | 2.0799 | 2.1215 | 2.1631 | 2.2047 | 2.2463 | 2.2879 | 2.3295 | 2.3711 | 2.4127 | 2.4543 | 2.4959 |
| 50 | 2.2403 | 2.2890 | 2.3377 | 2.3865 | 2.4352 | 2.4839 | 2.5326 | 2.5813 | 2.6300 | 2.6787 | 2.7274 | 2.7761 | 2.8248 | 2.8735 | 2.9222 |
| 60 | 2.5255 | 2.5804 | 2.6353 | 2.6902 | 2.7451 | 2.8000 | 2.8549 | 2.9098 | 2.9647 | 3.0196 | 3.0745 | 3.1294 | 3.1843 | 3.2392 | 3.2941 |
| 70 | 2.7754 | 2.8357 | 2.8960 | 2.9564 | 3.0167 | 3.0770 | 3.1374 | 3.1977 | 3.2581 | 3.3184 | 3.3787 | 3.4391 | 3.4994 | 3.5597 | 3.6201 |
| 80 | 2.9953 | 3.0604 | 3.1255 | 3.1906 | 3.2557 | 3.3208 | 3.3860 | 3.4511 | 3.5162 | 3.5813 | 3.6464 | 3.7115 | 3.7766 | 3.8418 | 3.9069 |
| 90 | 3.1895 | 3.2588 | 3.3282 | 3.3975 | 3.4669 | 3.5362 | 3.6055 | 3.6749 | 3.7442 | 3.8135 | 3.8829 | 3.9522 | 4.0216 | 4.0909 | 4.1602 |
| 100 | 3.3617 | 3.4348 | 3.5079 | 3.5809 | 3.6540 | 3.7271 | 3.8002 | 3.8733 | 3.9463 | 4.0194 | 4.0925 | 4.1656 | 4.2387 | 4.3117 | 4.3848 |
| 110 | 3.5148 | 3.5912 | 3.6676 | 3.7441 | 3.8205 | 3.8969 | 3.9733 | 4.0497 | 4.1261 | 4.2025 | 4.2789 | 4.3553 | 4.4317 | 4.5081 | 4.5846 |
| 120 | 3.6514 | 3.7308 | 3.8102 | 3.8896 | 3.9689 | 4.0483 | 4.1277 | 4.2071 | 4.2865 | 4.3658 | 4.4452 | 4.5246 | 4.6040 | 4.6833 | 4.7627 |
| 130 | 3.7736 | 3.8556 | 3.9377 | 4.0197 | 4.1017 | 4.1838 | 4.2658 | 4.3478 | 4.4299 | 4.5119 | 4.5940 | 4.6760 | 4.7580 | 4.8401 | 4.9221 |
| 140 | 3.8832 | 3.9676 | 4.0524 | 4.1364 | 4.2208 | 4.3053 | 4.3897 | 4.4741 | 4.5585 | 4.6429 | 4.7273 | 4.8118 | 4.8962 | 4.9806 | 5.0650 |
| 150 | 3.9816 | 4.0682 | 4.1548 | 4.2413 | 4.3279 | 4.4144 | 4.5010 | 4.5875 | 4.6741 | 4.7607 | 4.8472 | 4.9338 | 5.0203 | 5.1069 | 5.1935 |
| 160 | 4.0703 | 4.1588 | 4.2473 | 4.3358 | 4.4243 | 4.5128 | 4.6013 | 4.6897 | 4.7782 | 4.8667 | 4.9552 | 5.0437 | 5.1322 | 5.2207 | 5.3091 |
| 170 | 4.1504 | 4.2406 | 4.3308 | 4.4211 | 4.5113 | 4.6015 | 4.6917 | 4.7820 | 4.8722 | 4.9624 | 5.0526 | 5.1429 | 5.2331 | 5.3233 | 5.4135 |
| 180 | 4.2227 | 4.3145 | 4.4063 | 4.4981 | 4.5899 | 4.6817 | 4.7735 | 4.8653 | 4.9571 | 5.0489 | 5.1407 | 5.2325 | 5.3243 | 5.4161 | 5.5079 |
| 190 | 4.2882 | 4.3814 | 4.4747 | 4.5679 | 4.6611 | 4.7543 | 4.8475 | 4.9408 | 5.0340 | 5.1272 | 5.2204 | 5.3137 | 5.4069 | 5.5001 | 5.5933 |
| 200 | 4.3476 | 4.4421 | 4.5366 | 4.6311 | 4.7256 | 4.8201 | 4.9146 | 5.0092 | 5.1037 | 5.1982 | 5.2927 | 5.3872 | 5.4817 | 5.5762 | 5.6707 |
| 210 | 4.4014 | 4.4971 | 4.5928 | 4.6885 | 4.7842 | 4.8799 | 4.9755 | 5.0712 | 5.1669 | 5.2626 | 5.3583 | 5.4542 | 5.5496 | 5.6453 | 5.7410 |
| 220 | 4.4504 | 4.5471 | 4.6439 | 4.7406 | 4.8374 | 4.9341 | 5.0308 | 5.1276 | 5.2243 | 5.3211 | 5.4178 | 5.5146 | 5.6113 | 5.7081 | 5.8048 |
| 230 | 4.4948 | 4.5925 | 4.6903 | 4.7880 | 4.8857 | 4.9834 | 5.0811 | 5.1788 | 5.2765 | 5.3743 | 5.4720 | 5.5697 | 5.6674 | 5.7651 | 5.8628 |
| 240 | 4.5353 | 4.6339 | 4.7325 | 4.8310 | 4.9296 | 5.0282 | 5.1268 | 5.2254 | 5.3240 | 5.4226 | 5.5212 | 5.6198 | 5.7184 | 5.8170 | 5.9156 |
| 250 | 4.5721 | 4.6714 | 4.7708 | 4.8702 | 4.9696 | 5.0690 | 5.1684 | 5.2678 | 5.3672 | 5.4666 | 5.5660 | 5.6654 | 5.7648 | 5.8642 | 5.9636 |
| 260 | 4.6055 | 4.7056 | 4.8058 | 4.9059 | 5.0060 | 5.1061 | 5.2062 | 5.3064 | 5.4065 | 5.5066 | 5.6067 | 5.7068 | 5.8070 | 5.9071 | 6.0072 |
| 270 | 4.6360 | 4.7368 | 4.8375 | 4.9383 | 5.0391 | 5.1399 | 5.2407 | 5.3415 | 5.4422 | 5.5430 | 5.6438 | 5.7446 | 5.8454 | 5.9461 | 6.0469 |
| 280 | 4.6637 | 4.7651 | 4.8664 | 4.9678 | 5.0692 | 5.1706 | 5.2720 | 5.3734 | 5.4747 | 5.5761 | 5.6775 | 5.7789 | 5.8803 | 5.9817 | 6.0831 |
| 290 | 4.6889 | 4.7908 | 4.8927 | 4.9946 | 5.0966 | 5.1985 | 5.3004 | 5.4024 | 5.5043 | 5.6062 | 5.7082 | 5.8101 | 5.9120 | 6.0140 | 6.1159 |
| 300 | 4.7117 | 4.8142 | 4.9166 | 5.0190 | 5.1214 | 5.2239 | 5.3263 | 5.4287 | 5.5312 | 5.6336 | 5.7360 | 5.8384 | 5.9409 | 6.0433 | 6.1457 |
| 310 | 4.7325 | 4.8354 | 4.9382 | 5.0411 | 5.1440 | 5.2469 | 5.3498 | 5.4526 | 5.5555 | 5.6584 | 5.7613 | 5.8642 | 5.9670 | 6.0699 | 6.1728 |
| 320 | 4.7513 | 4.8546 | 4.9579 | 5.0611 | 5.1644 | 5.2677 | 5.3710 | 5.4743 | 5.5776 | 5.6809 | 5.7842 | 5.8875 | 5.9907 | 6.0940 | 6.1973 |
| 330 | 4.7683 | 4.8719 | 4.9756 | 5.0793 | 5.1829 | 5.2866 | 5.3902 | 5.4939 | 5.5976 | 5.7012 | 5.8049 | 5.9085 | 6.0122 | 6.1158 | 6.2195 |
| 340 | 4.7836 | 4.8876 | 4.9916 | 5.0956 | 5.1999 | 5.3036 | 5.4076 | 5.5116 | 5.6156 | 5.7196 | 5.8236 | 5.9276 | 6.0315 | 6.1355 | 6.2395 |
| 350 | 4.7975 | 4.9018 | 5.0061 | 5.1103 | 5.2146 | 5.3189 | 5.4232 | 5.5275 | 5.6318 | 5.7361 | 5.8404 | 5.9447 | 6.0490 | 6.1533 | 6.2576 |
| 360 | 4.8099 | 4.9144 | 5.0190 | 5.1236 | 5.2281 | 5.3327 | 5.4373 | 5.5418 | 5.6464 | 5.7509 | 5.8555 | 5.9601 | 6.0646 | 6.1692 | 6.2738 |
| 370 | 4.8210 | 4.9258 | 5.0306 | 5.1354 | 5.2402 | 5.3450 | 5.4498 | 5.5546 | 5.6594 | 5.7642 | 5.8690 | 5.9738 | 6.0786 | 6.1834 | 6.2882 |
| 380 | 4.8309 | 4.9359 | 5.0409 | 5.1459 | 5.2509 | 5.3560 | 5.4610 | 5.5660 | 5.6710 | 5.7760 | 5.8811 | 5.9861 | 6.0911 | 6.1961 | 6.3011 |
| 390 | 4.8396 | 4.9448 | 5.0500 | 5.1553 | 5.2605 | 5.3657 | 5.4709 | 5.5761 | 5.6813 | 5.7865 | 5.8917 | 5.9969 | 6.1021 | 6.2073 | 6.3126 |
| 400 | 4.8473 | 4.9527 | 5.0581 | 5.1635 | 5.2688 | 5.3742 | 5.4796 | 5.5850 | 5.6903 | 5.7957 | 5.9011 | 6.0065 | 6.1118 | 6.2172 | 6.3226 |
| 410 | 4.8541 | 4.9596 | 5.0651 | 5.1706 | 5.2761 | 5.3817 | 5.4872 | 5.5927 | 5.6982 | 5.8038 | 5.9093 | 6.0148 | 6.1203 | 6.2259 | 6.3314 |
| 420 | 4.8599 | 4.9655 | 5.0712 | 5.1768 | 5.2825 | 5.3881 | 5.4938 | 5.5994 | 5.7051 | 5.8107 | 5.9164 | 6.0220 | 6.1277 | 6.2333 | 6.3390 |
| 430 | 4.8648 | 4.9706 | 5.0763 | 5.1821 | 5.2879 | 5.3936 | 5.4994 | 5.6051 | 5.7109 | 5.8166 | 5.9224 | 6.0282 | 6.1339 | 6.2397 | 6.3454 |
| 440 | 4.8690 | 4.9748 | 5.0807 | 5.1865 | 5.2924 | 5.3982 | 5.5041 | 5.6099 | 5.7158 | 5.8216 | 5.9275 | 6.0333 | 6.1392 | 6.2450 | 6.3509 |
| 450 | 4.8724 | 4.9783 | 5.0843 | 5.1902 | 5.2961 | 5.4020 | 5.5079 | 5.6139 | 5.7198 | 5.8257 | 5.9316 | 6.0376 | 6.1435 | 6.2494 | 6.3553 |
| 460 | 4.8751 | 4.9811 | 5.0871 | 5.1931 | 5.2991 | 5.4050 | 5.5110 | 5.6170 | 5.7230 | 5.8290 | 5.9350 | 6.0409 | 6.1469 | 6.2529 | 6.3589 |
| 470 | 4.8772 | 4.9832 | 5.0893 | 5.1953 | 5.3013 | 5.4073 | 5.5134 | 5.6194 | 5.7254 | 5.8315 | 5.9375 | 6.0435 | 6.1495 | 6.2556 | 6.3616 |
| 480 | 4.8787 | 4.9847 | 5.0908 | 5.1969 | 5.3029 | 5.4090 | 5.5150 | 5.6211 | 5.7271 | 5.8332 | 5.9393 | 6.0453 | 6.1514 | 6.2574 | 6.3635 |

TABLE 1. Compton energy absorption cross sections (b/atom) in the energy region 1 keV–1 MeV—Continued

| <i>E</i> (keV) | Pd | Ag | Cd | In | Sn | Sb | Te | I | Xe | Cs | Ba | La | Ce | Pr | Nd |
|----------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 490 | 4.8796 | 4.9856 | 5.0917 | 5.1978 | 5.3039 | 5.4100 | 5.5160 | 5.6221 | 5.7282 | 5.8343 | 5.9403 | 6.0464 | 6.1525 | 6.2586 | 6.3647 |
| 500 | 4.8799 | 4.9860 | 5.0921 | 5.1982 | 5.3043 | 5.4103 | 5.5164 | 5.6225 | 5.7286 | 5.8347 | 5.9408 | 6.0469 | 6.1529 | 6.2590 | 6.3651 |
| 510 | 4.8798 | 4.9858 | 5.0919 | 5.1980 | 5.3041 | 5.4102 | 5.5163 | 5.6223 | 5.7284 | 5.8345 | 5.9406 | 6.0467 | 6.1527 | 6.2588 | 6.3649 |
| 520 | 4.8791 | 4.9852 | 5.0913 | 5.1973 | 5.3034 | 5.4095 | 5.5155 | 5.6216 | 5.7277 | 5.8338 | 5.9398 | 6.0459 | 6.1520 | 6.2580 | 6.3641 |
| 530 | 4.8781 | 4.9841 | 5.0902 | 5.1962 | 5.3022 | 5.4083 | 5.5143 | 5.6204 | 5.7264 | 5.8325 | 5.9385 | 6.0466 | 6.1506 | 6.2566 | 6.3627 |
| 540 | 4.8766 | 4.9826 | 5.0886 | 5.1946 | 5.3006 | 5.4066 | 5.5126 | 5.6187 | 5.7247 | 5.8307 | 5.9367 | 6.0427 | 6.1487 | 6.2547 | 6.3607 |
| 550 | 4.8747 | 4.9806 | 5.0860 | 5.1926 | 5.2986 | 5.4045 | 5.5105 | 5.6165 | 5.7224 | 5.8284 | 5.9344 | 6.0404 | 6.1463 | 6.2523 | 6.3583 |
| 560 | 4.8724 | 4.9783 | 5.0843 | 5.1902 | 5.2961 | 5.4020 | 5.5079 | 5.6139 | 5.7198 | 5.8257 | 5.9316 | 6.0375 | 6.1435 | 6.2494 | 6.3553 |
| 570 | 4.8698 | 4.9757 | 5.0815 | 5.1874 | 5.2933 | 5.3991 | 5.5050 | 5.6108 | 5.7167 | 5.8226 | 5.9284 | 6.0343 | 6.1402 | 6.2460 | 6.3519 |
| 580 | 4.8668 | 4.9726 | 5.0784 | 5.1842 | 5.2900 | 5.3958 | 5.5017 | 5.6075 | 5.7133 | 5.8191 | 5.9249 | 6.0307 | 6.1365 | 6.2423 | 6.3481 |
| 590 | 4.8636 | 4.9693 | 5.0750 | 5.1808 | 5.2865 | 5.3922 | 5.4980 | 5.6037 | 5.7094 | 5.8152 | 5.9209 | 6.0266 | 6.1323 | 6.2381 | 6.3438 |
| 600 | 4.8600 | 4.9657 | 5.0713 | 5.1770 | 5.2826 | 5.3883 | 5.4939 | 5.5996 | 5.7053 | 5.8109 | 5.9166 | 6.0222 | 6.1279 | 6.2335 | 6.3392 |
| 610 | 4.8562 | 4.9618 | 5.0673 | 5.1729 | 5.2785 | 5.3840 | 5.4896 | 5.5952 | 5.7008 | 5.8063 | 5.9119 | 6.0175 | 6.1230 | 6.2286 | 6.3342 |
| 620 | 4.8521 | 4.9576 | 5.0631 | 5.1685 | 5.2740 | 5.3795 | 5.4850 | 5.5905 | 5.6959 | 5.8014 | 5.9069 | 6.0124 | 6.1179 | 6.2233 | 6.3288 |
| 630 | 4.8478 | 4.9531 | 5.0585 | 5.1639 | 5.2693 | 5.3747 | 5.4801 | 5.5855 | 5.6908 | 5.7962 | 5.9016 | 6.0070 | 6.1124 | 6.2178 | 6.3232 |
| 640 | 4.8432 | 4.9485 | 5.0538 | 5.1590 | 5.2643 | 5.3696 | 5.4749 | 5.5802 | 5.6855 | 5.7908 | 5.8960 | 6.0013 | 6.1066 | 6.2119 | 6.3172 |
| 650 | 4.8384 | 4.9436 | 5.0487 | 5.1539 | 5.2591 | 5.3643 | 5.4695 | 5.5747 | 5.6798 | 5.7850 | 5.8902 | 5.9954 | 6.1006 | 6.2057 | 6.3109 |
| 660 | 4.8334 | 4.9384 | 5.0435 | 5.1486 | 5.2537 | 5.3587 | 5.4638 | 5.5689 | 5.6740 | 5.7790 | 5.8841 | 5.9892 | 6.0943 | 6.1993 | 6.3044 |
| 670 | 4.8282 | 4.9331 | 5.0381 | 5.1430 | 5.2480 | 5.3530 | 5.4579 | 5.5629 | 5.6678 | 5.7728 | 5.8778 | 5.9827 | 6.0877 | 6.1926 | 6.2976 |
| 680 | 4.8228 | 4.9276 | 5.0325 | 5.1373 | 5.2421 | 5.3470 | 5.4518 | 5.5567 | 5.6615 | 5.7664 | 5.8712 | 5.9760 | 6.0809 | 6.1857 | 6.2906 |
| 690 | 4.8172 | 4.9219 | 5.0267 | 5.1314 | 5.2361 | 5.3408 | 5.4455 | 5.5503 | 5.6550 | 5.7597 | 5.8644 | 5.9692 | 6.0739 | 6.1786 | 6.2833 |
| 700 | 4.8115 | 4.9161 | 5.0207 | 5.1253 | 5.2299 | 5.3345 | 5.4391 | 5.5437 | 5.6483 | 5.7529 | 5.8574 | 5.9620 | 6.0666 | 6.1712 | 6.2758 |
| 710 | 4.8056 | 4.9101 | 5.0145 | 5.1193 | 5.2235 | 5.3279 | 5.4324 | 5.5369 | 5.6413 | 5.7458 | 5.8503 | 5.9547 | 6.0592 | 6.1637 | 6.2682 |
| 720 | 4.7995 | 4.9039 | 5.0082 | 5.1126 | 5.2169 | 5.3212 | 5.4256 | 5.5299 | 5.6342 | 5.7386 | 5.8429 | 5.9473 | 6.0516 | 6.1559 | 6.2603 |
| 730 | 4.7934 | 4.8976 | 5.0018 | 5.1060 | 5.2102 | 5.3144 | 5.4186 | 5.5228 | 5.6270 | 5.7312 | 5.8354 | 5.9396 | 6.0438 | 6.1480 | 6.2522 |
| 740 | 4.7871 | 4.8911 | 4.9952 | 5.0993 | 5.2033 | 5.3074 | 5.4115 | 5.5155 | 5.6196 | 5.7237 | 5.8277 | 5.9318 | 6.0359 | 6.1399 | 6.2440 |
| 750 | 4.7806 | 4.8845 | 4.9885 | 5.0924 | 5.1963 | 5.3002 | 5.4042 | 5.5081 | 5.6120 | 5.7164 | 5.8199 | 5.9238 | 6.0277 | 6.1317 | 6.2356 |
| 760 | 4.7741 | 4.8778 | 4.9816 | 5.0854 | 5.1892 | 5.2930 | 5.3968 | 5.5006 | 5.6043 | 5.7081 | 5.8119 | 5.9157 | 6.0195 | 6.1233 | 6.2270 |
| 770 | 4.7674 | 4.8710 | 4.9747 | 5.0783 | 5.1820 | 5.2856 | 5.3892 | 5.4929 | 5.5965 | 5.7001 | 5.8038 | 5.9074 | 6.0111 | 6.1147 | 6.2183 |
| 780 | 4.7606 | 4.8641 | 4.9676 | 5.0711 | 5.1746 | 5.2781 | 5.3816 | 5.4851 | 5.5886 | 5.6921 | 5.7955 | 5.8990 | 6.0025 | 6.1060 | 6.2095 |
| 790 | 4.7538 | 4.8571 | 4.9604 | 5.0638 | 5.1671 | 5.2705 | 5.3738 | 5.4772 | 5.5805 | 5.6838 | 5.7872 | 5.8905 | 5.9939 | 6.0972 | 6.2005 |
| 800 | 4.7468 | 4.8500 | 4.9532 | 5.0564 | 5.1596 | 5.2627 | 5.3659 | 5.4691 | 5.5723 | 5.6755 | 5.7787 | 5.8819 | 5.9851 | 6.0883 | 6.1915 |
| 810 | 4.7397 | 4.8428 | 4.9458 | 5.0489 | 5.1519 | 5.2549 | 5.3580 | 5.4610 | 5.5640 | 5.6710 | 5.7701 | 5.8732 | 5.9762 | 6.0792 | 6.1823 |
| 820 | 4.7326 | 4.8355 | 4.9384 | 5.0413 | 5.1441 | 5.2470 | 5.3499 | 5.4528 | 5.5557 | 5.6585 | 5.7614 | 5.8643 | 5.9672 | 6.0701 | 6.1730 |
| 830 | 4.7254 | 4.8281 | 4.9308 | 5.0336 | 5.1363 | 5.2390 | 5.3417 | 5.4445 | 5.5472 | 5.6499 | 5.7527 | 5.8554 | 5.9581 | 6.0608 | 6.1636 |
| 840 | 4.7181 | 4.8207 | 4.9232 | 5.0258 | 5.1284 | 5.2309 | 5.3335 | 5.4361 | 5.5386 | 5.6412 | 5.7438 | 5.8463 | 5.9489 | 6.0515 | 6.1541 |
| 850 | 4.7108 | 4.8132 | 4.9156 | 5.0180 | 5.1204 | 5.2228 | 5.3252 | 5.4276 | 5.5300 | 5.6324 | 5.7348 | 5.8372 | 5.9396 | 6.0421 | 6.1445 |
| 860 | 4.7033 | 4.8056 | 4.9078 | 5.0101 | 5.1123 | 5.2146 | 5.3168 | 5.4191 | 5.5213 | 5.6236 | 5.7258 | 5.828 | 5.9303 | 6.0325 | 6.1348 |
| 870 | 4.6959 | 4.7979 | 4.9000 | 5.0021 | 5.1042 | 5.2063 | 5.3084 | 5.4104 | 5.5125 | 5.6146 | 5.7167 | 5.8188 | 5.9209 | 6.0229 | 6.1250 |
| 880 | 4.6883 | 4.7902 | 4.8922 | 4.9941 | 5.0960 | 5.1979 | 5.2998 | 5.4018 | 5.5037 | 5.6056 | 5.7075 | 5.8094 | 5.9114 | 6.0133 | 6.1152 |
| 890 | 4.6807 | 4.7825 | 4.8842 | 4.9860 | 5.0877 | 5.1895 | 5.2913 | 5.3930 | 5.4948 | 5.5965 | 5.6983 | 5.8000 | 5.9018 | 6.0035 | 6.1053 |
| 900 | 4.6731 | 4.7747 | 4.8763 | 4.9779 | 5.0794 | 5.1810 | 5.2826 | 5.3842 | 5.4858 | 5.5874 | 5.6890 | 5.7906 | 5.8922 | 5.9937 | 6.0953 |
| 910 | 4.6654 | 4.7668 | 4.8682 | 4.9697 | 5.0711 | 5.1725 | 5.2739 | 5.3754 | 5.4768 | 5.5782 | 5.6796 | 5.7810 | 5.8825 | 5.9839 | 6.0853 |
| 920 | 4.6577 | 4.7589 | 4.8602 | 4.9614 | 5.0627 | 5.1639 | 5.2652 | 5.3664 | 5.4677 | 5.5690 | 5.6702 | 5.7715 | 5.8727 | 5.9740 | 6.0752 |
| 930 | 4.6499 | 4.7510 | 4.8521 | 4.9532 | 5.0542 | 5.1553 | 5.2564 | 5.3575 | 5.4586 | 5.5597 | 5.6608 | 5.7618 | 5.8629 | 5.9640 | 6.0651 |
| 940 | 4.6421 | 4.7430 | 4.8439 | 4.9448 | 5.0458 | 5.1467 | 5.2476 | 5.3485 | 5.4494 | 5.5503 | 5.6512 | 5.7522 | 5.8531 | 5.9540 | 6.0549 |
| 950 | 4.6343 | 4.7350 | 4.8357 | 4.9365 | 5.0372 | 5.1380 | 5.2387 | 5.3395 | 5.4402 | 5.5410 | 5.6417 | 5.7424 | 5.8432 | 5.9439 | 6.0447 |
| 960 | 4.6264 | 4.7270 | 4.8275 | 4.9281 | 5.0287 | 5.1292 | 5.2298 | 5.3304 | 5.4310 | 5.5315 | 5.6321 | 5.7327 | 5.8333 | 5.9338 | 6.0344 |
| 970 | 4.6185 | 4.7189 | 4.8193 | 4.9197 | 5.0201 | 5.1205 | 5.2209 | 5.3213 | 5.4217 | 5.5221 | 5.6225 | 5.7229 | 5.8233 | 5.9237 | 6.0241 |
| 980 | 4.6105 | 4.7108 | 4.8110 | 4.9112 | 5.0115 | 5.1117 | 5.2119 | 5.3122 | 5.4124 | 5.5126 | 5.6128 | 5.7131 | 5.8133 | 5.9135 | 6.0138 |
| 990 | 4.6026 | 4.7026 | 4.8027 | 4.9028 | 5.0028 | 5.1029 | 5.2029 | 5.3030 | 5.4030 | 5.5031 | 5.6032 | 5.7032 | 5.8033 | 5.9033 | 6.0034 |
| 1000 | 4.5946 | 4.6945 | 4.7944 | 4.8943 | 4.9941 | 5.0940 | 5.1939 | 5.2938 | 5.3937 | 5.4936 | 5.5934 | 5.6933 | 5.7932 | 5.8911 | 5.9930 |
| <i>E</i> (keV) | Pm | Sm | Eu | Gd | Tb | Dy | Ho | Er | Tm | Yb | Lu | Hf | Ta | W | Re |
| 1 | 0.0846 | 0.0860 | 0.0874 | 0.0888 | 0.0902 | 0.0916 | 0.0930 | 0.0944 | 0.0958 | 0.0971 | 0.0985 | 0.0999 | 0.1013 | 0.1027 | 0.1041 |
| 2 | 0.1679 | 0.1707 | 0.1734 | 0.1762 | 0.1789 | 0.1817 | 0.1844 | 0.1872 | 0.1899 | 0.1927 | 0.1954 | 0.1982 | 0.2010 | 0.2037 | 0.2065 |
| 3 | 0.2498 | 0.2539 | 0.2580 | 0.2621 | 0.2662 | 0.2703 | 0.2744 | 0.2785 | 0.2826 | 0.2867 | 0.2908 | 0.2949 | 0.2990 | 0.3031 | 0.3072 |
| 4 | 0.3305 | 0.3359 | 0.3413 | 0.3467 | 0.3521 | 0.3575 | 0.3630 | 0.3684 | 0.3738 | 0.3792 | 0.3846 | 0.3900 | 0.3955 | 0.4009 | 0.4063 |
| 5 | 0.4098 | 0.4165 | 0.4232 | 0.4299 | 0.4366 | 0.4434 | 0.4501 | 0.4568 | 0.4635 | 0.4702 | 0.4769 | 0.4837 | 0.4904 | 0.4971 | 0.5038 |
| 6 | 0.4878 | 0.4958 | 0.5038 | 0.5118 | 0.5198 | 0.5278 | 0.5358 | 0.5438 | 0.5518 | 0.5598 | 0.5678 | 0.5758 | 0.5838 | 0.5918 | 0.5998 |
| 7 | 0.5646 | 0.5739 | 0.5831 | 0.5924 | 0.6016 | 0.6109 | 0.6202 | 0.6294 | 0.6387 | 0.6479 | 0.6572 | 0.6664 | 0.6757 | 0.6850 | 0.6942 |
| 8 | 0.6402 | 0.6507 | 0.6612 | 0.6717 | 0.6822 | 0.6927 | 0.7032 | 0.7137 | 0.7242 | 0.7347 | 0.7452 | 0.7557 | 0.7662 | 0.7766 | 0.7871 |
| 9 | 0.7146 | 0.7263 | 0.7380 | 0.7497 | 0.7615 | 0.7732 | 0.7849 | 0.7966 | 0.8083 | 0.8200 | 0.8318 | 0.8435 | 0.8552 | 0.8669 | 0.8786 |
| 10 | 0.7878 | 0.8007 | 0.8137 | 0.8266 | 0.8395 | 0.8524 | 0.8653 | 0.8782 | 0.8911 | 0.9041 | 0.9170 | 0.9299 | 0.9428 | 0.9557 | 0.9686 |
| 20 | 1.4605 | 1.4845 | 1.5084 | 1.5323 | 1.5563 | 1.5802 | 1.6042 | 1.6281 | 1.6521 | 1.6760 | 1.6999 | 1.7239 | 1.7478 | 1.7718 | 1.7957 |

TABLE 1. Compton energy absorption cross sections (b/atom) in the energy region 1 keV–1 MeV—Continued

| E(keV) | Pm | Sm | Eu | Gd | Tb | Dy | Ho | Er | Tm | Yb | Lu | Hf | Ta | W | Re |
|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 30 | 2.0383 | 2.0718 | 2.1052 | 2.1386 | 2.1720 | 2.2054 | 2.2388 | 2.2723 | 2.3057 | 2.3391 | 2.3725 | 2.4059 | 2.4393 | 2.4727 | 2.5062 |
| 40 | 2.5375 | 2.5791 | 2.6207 | 2.6623 | 2.7039 | 2.7455 | 2.7871 | 2.8287 | 2.8703 | 2.9119 | 2.9535 | 2.9951 | 3.0367 | 3.0783 | 3.1199 |
| 50 | 2.9709 | 3.0196 | 3.0683 | 3.1170 | 3.1657 | 3.2144 | 3.2631 | 3.3118 | 3.3605 | 3.4092 | 3.4579 | 3.5066 | 3.5553 | 3.6040 | 3.6527 |
| 60 | 3.3490 | 3.4039 | 3.4588 | 3.5137 | 3.5686 | 3.6235 | 3.6784 | 3.7333 | 3.7882 | 3.8431 | 3.8980 | 3.9529 | 4.0078 | 4.0627 | 4.1176 |
| 70 | 3.6804 | 3.7407 | 3.8011 | 3.8614 | 3.9217 | 3.9821 | 4.0424 | 4.1027 | 4.1631 | 4.2234 | 4.2837 | 4.3441 | 4.4044 | 4.4647 | 4.5251 |
| 80 | 3.9720 | 4.0371 | 4.1022 | 4.1673 | 4.2324 | 4.2976 | 4.3627 | 4.4278 | 4.4929 | 4.5580 | 4.6231 | 4.6883 | 4.7534 | 4.8185 | 4.8836 |
| 90 | 4.2296 | 4.2989 | 4.3682 | 4.4376 | 4.5069 | 4.5763 | 4.6456 | 4.7149 | 4.7843 | 4.8536 | 4.9229 | 4.9923 | 5.0616 | 5.1310 | 5.2003 |
| 100 | 4.4579 | 4.5310 | 4.6041 | 4.6771 | 4.7502 | 4.8233 | 4.8964 | 4.9695 | 5.0425 | 5.1156 | 5.1887 | 5.2618 | 5.3349 | 5.4079 | 5.4810 |
| 110 | 4.6610 | 4.7374 | 4.8138 | 4.8902 | 4.9666 | 5.0430 | 5.1194 | 5.1958 | 5.2722 | 5.3487 | 5.4251 | 5.5015 | 5.5779 | 5.6543 | 5.7307 |
| 120 | 4.8421 | 4.9215 | 5.0009 | 5.0802 | 5.1596 | 5.2390 | 5.3184 | 5.3978 | 5.4771 | 5.5565 | 5.6359 | 5.7153 | 5.7947 | 5.8740 | 5.9534 |
| 130 | 5.0041 | 5.0862 | 5.1682 | 5.2502 | 5.3323 | 5.4143 | 5.4963 | 5.5784 | 5.6604 | 5.7424 | 5.8245 | 5.9065 | 5.9885 | 6.0706 | 6.1526 |
| 140 | 5.1494 | 5.2338 | 5.3183 | 5.4027 | 5.4871 | 5.5715 | 5.6559 | 5.7403 | 5.8248 | 5.9092 | 5.9936 | 6.0780 | 6.1624 | 6.2468 | 6.3313 |
| 150 | 5.2800 | 5.3666 | 5.4531 | 5.5397 | 5.6262 | 5.7128 | 5.7994 | 5.8859 | 5.9725 | 6.0590 | 6.1456 | 6.2321 | 6.3187 | 6.4053 | 6.4918 |
| 160 | 5.3976 | 5.4861 | 5.5746 | 5.6631 | 5.7516 | 5.8401 | 5.9285 | 6.0170 | 6.1055 | 6.1940 | 6.2825 | 6.3710 | 6.4595 | 6.5479 | 6.6364 |
| 170 | 5.5038 | 5.5940 | 5.6842 | 5.7744 | 5.8647 | 5.9549 | 6.0451 | 6.1353 | 6.2256 | 6.3158 | 6.4060 | 6.4962 | 6.5865 | 6.6767 | 6.7669 |
| 180 | 5.5997 | 5.6915 | 5.7833 | 5.8751 | 5.9669 | 6.0587 | 6.1505 | 6.2423 | 6.3341 | 6.4259 | 6.5177 | 6.6095 | 6.7013 | 6.7931 | 6.8849 |
| 190 | 5.6865 | 5.7798 | 5.8730 | 5.9662 | 6.0594 | 6.1527 | 6.2459 | 6.3391 | 6.4323 | 6.5255 | 6.6188 | 6.7120 | 6.8052 | 6.8984 | 6.9917 |
| 200 | 5.7653 | 5.8598 | 5.9543 | 6.0488 | 6.1433 | 6.2378 | 6.3323 | 6.4268 | 6.5214 | 6.6159 | 6.7104 | 6.8049 | 6.8994 | 6.9939 | 7.0884 |
| 210 | 5.8367 | 5.9324 | 6.0281 | 6.1237 | 6.2194 | 6.3151 | 6.4108 | 6.5065 | 6.6022 | 6.6978 | 6.7935 | 6.8892 | 6.9849 | 7.0806 | 7.1763 |
| 220 | 5.9016 | 5.9983 | 6.0951 | 6.1918 | 6.2886 | 6.3853 | 6.4821 | 6.5788 | 6.6755 | 6.7723 | 6.8690 | 6.9658 | 7.0625 | 7.1593 | 7.2560 |
| 230 | 5.9605 | 6.0582 | 6.1560 | 6.2537 | 6.3514 | 6.4491 | 6.5468 | 6.6445 | 6.7422 | 6.8400 | 6.9377 | 7.0354 | 7.1331 | 7.2308 | 7.3285 |
| 240 | 6.0142 | 6.1128 | 6.2113 | 6.3099 | 6.4085 | 6.5071 | 6.6057 | 6.7043 | 6.8029 | 6.9015 | 7.0001 | 7.0987 | 7.1973 | 7.2959 | 7.3945 |
| 250 | 6.0629 | 6.1623 | 6.2617 | 6.3611 | 6.4605 | 6.5599 | 6.6593 | 6.7587 | 6.8581 | 6.9575 | 7.0569 | 7.1563 | 7.2557 | 7.3550 | 7.4544 |
| 260 | 6.1073 | 6.2074 | 6.3076 | 6.4077 | 6.5078 | 6.6079 | 6.7081 | 6.8082 | 6.9083 | 7.0084 | 7.1085 | 7.2087 | 7.3088 | 7.4089 | 7.5090 |
| 270 | 6.1477 | 6.2485 | 6.3493 | 6.4501 | 6.5508 | 6.6516 | 6.7524 | 6.8532 | 6.9540 | 7.0548 | 7.1555 | 7.2563 | 7.3571 | 7.4579 | 7.5587 |
| 280 | 6.1844 | 6.2858 | 6.3872 | 6.4886 | 6.5900 | 6.6914 | 6.7927 | 6.8941 | 6.9955 | 7.0969 | 7.1983 | 7.2997 | 7.4010 | 7.5024 | 7.6038 |
| 290 | 6.2178 | 6.3198 | 6.4217 | 6.5236 | 6.6256 | 6.7275 | 6.8294 | 6.9313 | 7.0333 | 7.1352 | 7.2371 | 7.3391 | 7.4410 | 7.5429 | 7.6449 |
| 300 | 6.2482 | 6.3506 | 6.4530 | 6.5554 | 6.6579 | 6.7603 | 6.8627 | 6.9652 | 7.0676 | 7.1700 | 7.2724 | 7.3749 | 7.4773 | 7.5797 | 7.6822 |
| 310 | 6.2757 | 6.3786 | 6.4814 | 6.5843 | 6.6872 | 6.7901 | 6.8929 | 6.9958 | 7.0987 | 7.2016 | 7.3045 | 7.4073 | 7.5102 | 7.6131 | 7.7160 |
| 320 | 6.3006 | 6.4039 | 6.5072 | 6.6105 | 6.7138 | 6.8170 | 6.9203 | 7.0236 | 7.1269 | 7.2302 | 7.3335 | 7.4368 | 7.5401 | 7.6434 | 7.7466 |
| 330 | 6.3232 | 6.4268 | 6.5305 | 6.6341 | 6.7378 | 6.8415 | 6.9451 | 7.0488 | 7.1524 | 7.2561 | 7.3597 | 7.4634 | 7.5671 | 7.6707 | 7.7744 |
| 340 | 6.3435 | 6.4475 | 6.5515 | 6.6555 | 6.7595 | 6.8635 | 6.9675 | 7.0715 | 7.1755 | 7.2795 | 7.3834 | 7.4874 | 7.5914 | 7.6954 | 7.7994 |
| 350 | 6.3619 | 6.4662 | 6.5704 | 6.6747 | 6.7790 | 6.8833 | 6.9876 | 7.0919 | 7.1962 | 7.3005 | 7.4048 | 7.5091 | 7.6134 | 7.7177 | 7.8220 |
| 360 | 6.3783 | 6.4829 | 6.5874 | 6.6920 | 6.7966 | 6.9011 | 7.0057 | 7.1103 | 7.2148 | 7.3194 | 7.4239 | 7.5285 | 7.6331 | 7.7376 | 7.8422 |
| 370 | 6.3930 | 6.4978 | 6.6027 | 6.7075 | 6.8123 | 6.9171 | 7.0219 | 7.1267 | 7.2315 | 7.3363 | 7.4411 | 7.5459 | 7.6507 | 7.7555 | 7.8603 |
| 380 | 6.4062 | 6.5112 | 6.6162 | 6.7212 | 6.8262 | 6.9312 | 7.0363 | 7.1413 | 7.2463 | 7.3513 | 7.4563 | 7.5614 | 7.6664 | 7.7714 | 7.8764 |
| 390 | 6.4178 | 6.5230 | 6.6282 | 6.7334 | 6.8386 | 6.9438 | 7.0490 | 7.1542 | 7.2594 | 7.3646 | 7.4699 | 7.5751 | 7.6803 | 7.7855 | 7.8907 |
| 400 | 6.4280 | 6.5334 | 6.6387 | 6.7441 | 6.8495 | 6.9549 | 7.0602 | 7.1656 | 7.2710 | 7.3764 | 7.4817 | 7.5871 | 7.6925 | 7.7979 | 7.9033 |
| 410 | 6.4369 | 6.5424 | 6.6479 | 6.7535 | 6.8590 | 6.9645 | 7.0700 | 7.1756 | 7.2811 | 7.3866 | 7.4921 | 7.5976 | 7.7032 | 7.8087 | 7.9142 |
| 420 | 6.4446 | 6.5503 | 6.6559 | 6.7616 | 6.8672 | 6.9729 | 7.0785 | 7.1841 | 7.2898 | 7.3954 | 7.5011 | 7.6067 | 7.7124 | 7.8180 | 7.9237 |
| 430 | 6.4512 | 6.5569 | 6.6627 | 6.7685 | 6.8742 | 6.9800 | 7.0857 | 7.1915 | 7.2972 | 7.4030 | 7.5088 | 7.6145 | 7.7203 | 7.8260 | 7.9318 |
| 440 | 6.4567 | 6.5626 | 6.6684 | 6.7743 | 6.8801 | 6.9859 | 7.0918 | 7.1976 | 7.3035 | 7.4093 | 7.5152 | 7.6210 | 7.7269 | 7.8327 | 7.9386 |
| 450 | 6.4612 | 6.5672 | 6.6731 | 6.7790 | 6.8849 | 6.9909 | 7.0968 | 7.2027 | 7.3086 | 7.4145 | 7.5205 | 7.6264 | 7.7323 | 7.8382 | 7.9442 |
| 460 | 6.4649 | 6.5708 | 6.6768 | 6.7828 | 6.8888 | 6.9948 | 7.1007 | 7.2067 | 7.3127 | 7.4187 | 7.5247 | 7.6307 | 7.7366 | 7.8426 | 7.9486 |
| 470 | 6.4676 | 6.5736 | 6.6797 | 6.7857 | 6.8917 | 6.9977 | 7.1038 | 7.2098 | 7.3158 | 7.4218 | 7.5279 | 7.6339 | 7.7399 | 7.8460 | 7.9520 |
| 480 | 6.4696 | 6.5756 | 6.6817 | 6.7877 | 6.8938 | 6.9998 | 7.1059 | 7.2120 | 7.3180 | 7.4241 | 7.5301 | 7.6362 | 7.7423 | 7.8483 | 7.9544 |
| 490 | 6.4707 | 6.5768 | 6.6829 | 6.7890 | 6.8950 | 7.0011 | 7.1072 | 7.2133 | 7.3194 | 7.4254 | 7.5315 | 7.6376 | 7.7437 | 7.8497 | 7.9558 |
| 500 | 6.4712 | 6.5773 | 6.6834 | 6.7895 | 6.8955 | 7.0016 | 7.1077 | 7.2138 | 7.3199 | 7.4260 | 7.5321 | 7.6381 | 7.7442 | 7.8503 | 7.9564 |
| 510 | 6.4710 | 6.5771 | 6.6832 | 6.7892 | 6.8953 | 7.0014 | 7.1075 | 7.2136 | 7.3197 | 7.4257 | 7.5318 | 7.6379 | 7.7440 | 7.8501 | 7.9561 |
| 520 | 6.4702 | 6.5762 | 6.6823 | 6.7884 | 6.8944 | 7.0005 | 7.1066 | 7.2126 | 7.3187 | 7.4248 | 7.5308 | 7.6369 | 7.7430 | 7.8490 | 7.9551 |
| 530 | 6.4687 | 6.5748 | 6.6808 | 6.7869 | 6.8929 | 6.9990 | 7.1050 | 7.2110 | 7.3171 | 7.4231 | 7.5292 | 7.6352 | 7.7413 | 7.8473 | 7.9534 |
| 540 | 6.4668 | 6.5728 | 6.6788 | 6.7848 | 6.8908 | 6.9968 | 7.1028 | 7.2088 | 7.3148 | 7.4209 | 7.5269 | 7.6329 | 7.7389 | 7.8449 | 7.9509 |
| 550 | 6.4642 | 6.5702 | 6.6762 | 6.7822 | 6.8881 | 6.9941 | 7.1001 | 7.2060 | 7.3120 | 7.4180 | 7.5240 | 7.6299 | 7.7359 | 7.8419 | 7.9478 |
| 560 | 6.4612 | 6.5672 | 6.6731 | 6.7790 | 6.8849 | 6.9908 | 7.0968 | 7.2027 | 7.3086 | 7.4145 | 7.5205 | 7.6264 | 7.7323 | 7.8382 | 7.9441 |
| 570 | 6.4578 | 6.5636 | 6.6695 | 6.7754 | 6.8812 | 6.9871 | 7.0930 | 7.1988 | 7.3047 | 7.4106 | 7.5164 | 7.6223 | 7.7281 | 7.8340 | 7.9399 |
| 580 | 6.4539 | 6.5597 | 6.6655 | 6.7713 | 6.8771 | 6.9829 | 7.0887 | 7.1945 | 7.3003 | 7.4061 | 7.5119 | 7.6177 | 7.7235 | 7.8293 | 7.9351 |
| 590 | 6.4495 | 6.5553 | 6.6610 | 6.7667 | 6.8725 | 6.9782 | 7.0839 | 7.1896 | 7.2954 | 7.4011 | 7.5068 | 7.6126 | 7.7183 | 7.8240 | 7.9298 |
| 600 | 6.4448 | 6.5505 | 6.6561 | 6.7618 | 6.8674 | 6.9731 | 7.0787 | 7.1844 | 7.2900 | 7.3957 | 7.5013 | 7.6070 | 7.7127 | 7.8183 | 7.9240 |
| 610 | 6.4397 | 6.5453 | 6.6509 | 6.7564 | 6.8620 | 6.9676 | 7.0732 | 7.1787 | 7.2843 | 7.3899 | 7.4954 | 7.6010 | 7.7066 | 7.8121 | 7.9177 |
| 620 | 6.4343 | 6.5398 | 6.6453 | 6.7507 | 6.8562 | 6.9617 | 7.0672 | 7.1727 | 7.2781 | 7.3836 | 7.4891 | 7.5946 | 7.7001 | 7.8056 | 7.9110 |
| 630 | 6.4285 | 6.5339 | 6.6393 | 6.7447 | 6.8501 | 6.9555 | 7.0609 | 7.1662 | 7.2716 | 7.3770 | 7.4824 | 7.5878 | 7.6932 | 7.7986 | 7.9040 |
| 640 | 6.4225 | 6.5278 | 6.6330 | 6.7383 | 6.8436 | 6.9489 | 7.0542 | 7.1595 | 7.2648 | 7.3701 | 7.4753 | 7.5806 | 7.6859 | 7.7912 | 7.8965 |
| 650 | 6.4161 | 6.5213 | 6.6265 | 6.7317 | 6.8368 | 6.9420 | 7.0472 | 7.1524 | 7.2576 | 7.3628 | 7.4679 | 7.5731 | 7.6783 | 7.7835 | 7.8887 |
| 660 | 6.4095 | 6.5145 | 6.6196 | 6.7247 | 6.8298 | 6.9348 | 7.0399 | 7.1450 | 7.2501 | 7.3551 | 7.4602 | 7.5653 | 7.6704 | 7.7754 | 7.8805 |
| 670 | 6.4026 | 6.5075 | 6.6125 | 6.7175 | 6.8224 | 6.9274 | 7.0323 | 7.1373 | 7.2423 | 7.3472 | 7.4522 | 7.5571 | 7.6621 | 7.7671 | 7.8720 |

TABLE 1. Compton energy absorption cross sections (b/atom) in the energy region 1 keV–1 MeV—Continued

| <i>E</i> (keV) | Pm | Sm | Eu | Gd | Tb | Dy | Ho | Er | Tm | Yb | Lu | Hf | Ta | W | Re |
|----------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 680 | 6.3954 | 6.5003 | 6.6051 | 6.7099 | 6.8148 | 6.9196 | 7.0245 | 7.1293 | 7.2342 | 7.3390 | 7.4439 | 7.5487 | 7.6535 | 7.7584 | 7.8632 |
| 690 | 6.3880 | 6.4928 | 6.5975 | 6.7022 | 6.8069 | 6.9116 | 7.0164 | 7.1211 | 7.2258 | 7.3305 | 7.4353 | 7.5400 | 7.6447 | 7.7494 | 7.8541 |
| 700 | 6.3804 | 6.4850 | 6.5896 | 6.6942 | 6.7988 | 6.9034 | 7.0080 | 7.1126 | 7.2172 | 7.3218 | 7.4264 | 7.5310 | 7.6356 | 7.7402 | 7.8448 |
| 710 | 6.3726 | 6.4771 | 6.5816 | 6.6860 | 6.7905 | 6.8950 | 6.9994 | 7.1039 | 7.2084 | 7.3128 | 7.4173 | 7.5218 | 7.6263 | 7.7307 | 7.8352 |
| 720 | 6.3646 | 6.4690 | 6.5733 | 6.6776 | 6.7820 | 6.8863 | 6.9906 | 7.0950 | 7.1993 | 7.3037 | 7.4080 | 7.5123 | 7.6167 | 7.7210 | 7.8253 |
| 730 | 6.3564 | 6.4606 | 6.5648 | 6.6690 | 6.7732 | 6.8774 | 6.9816 | 7.0858 | 7.1900 | 7.2943 | 7.3985 | 7.5027 | 7.6069 | 7.7111 | 7.8153 |
| 740 | 6.3481 | 6.4521 | 6.5562 | 6.6602 | 6.7643 | 6.8684 | 6.9724 | 7.0765 | 7.1806 | 7.2846 | 7.3887 | 7.4928 | 7.5968 | 7.7009 | 7.8050 |
| 750 | 6.3395 | 6.4434 | 6.5474 | 6.6513 | 6.7552 | 6.8591 | 6.9631 | 7.0670 | 7.1709 | 7.2749 | 7.3788 | 7.4827 | 7.5866 | 7.6906 | 7.7945 |
| 760 | 6.3308 | 6.4346 | 6.5384 | 6.6422 | 6.7460 | 6.8497 | 6.9535 | 7.0573 | 7.1611 | 7.2649 | 7.3687 | 7.4724 | 7.5762 | 7.6800 | 7.7838 |
| 770 | 6.3220 | 6.4256 | 6.5293 | 6.6329 | 6.7365 | 6.8402 | 6.9438 | 7.0475 | 7.1511 | 7.2547 | 7.3584 | 7.4620 | 7.5657 | 7.6693 | 7.7729 |
| 780 | 6.3130 | 6.4165 | 6.5200 | 6.6235 | 6.7270 | 6.8305 | 6.9340 | 7.0374 | 7.1409 | 7.2444 | 7.3479 | 7.4514 | 7.5549 | 7.6584 | 7.7619 |
| 790 | 6.3039 | 6.4072 | 6.5106 | 6.6139 | 6.7173 | 6.8206 | 6.9239 | 7.0273 | 7.1306 | 7.2340 | 7.3373 | 7.4407 | 7.5440 | 7.6473 | 7.7507 |
| 800 | 6.2947 | 6.3978 | 6.5010 | 6.6042 | 6.7074 | 6.8106 | 6.9138 | 7.0170 | 7.1202 | 7.2234 | 7.3266 | 7.4298 | 7.5330 | 7.6361 | 7.7393 |
| 810 | 6.2853 | 6.3883 | 6.4914 | 6.5944 | 6.6975 | 6.8005 | 6.9035 | 7.0066 | 7.1096 | 7.2126 | 7.3157 | 7.4187 | 7.5218 | 7.6248 | 7.7278 |
| 820 | 6.2758 | 6.3787 | 6.4816 | 6.5845 | 6.6874 | 6.7903 | 6.8931 | 6.9960 | 7.0989 | 7.2018 | 7.3047 | 7.4076 | 7.5104 | 7.6133 | 7.7162 |
| 830 | 6.2663 | 6.3690 | 6.4717 | 6.5745 | 6.6772 | 6.7799 | 6.8826 | 6.9854 | 7.0881 | 7.1908 | 7.2935 | 7.3963 | 7.4990 | 7.6017 | 7.7044 |
| 840 | 6.2566 | 6.3592 | 6.4618 | 6.5643 | 6.6669 | 6.7695 | 6.8720 | 6.9746 | 7.0772 | 7.1797 | 7.2823 | 7.3849 | 7.4874 | 7.5900 | 7.6926 |
| 850 | 6.2469 | 6.3493 | 6.4517 | 6.5541 | 6.6565 | 6.7589 | 6.8613 | 6.9637 | 7.0661 | 7.1685 | 7.2709 | 7.3734 | 7.4758 | 7.5782 | 7.6806 |
| 860 | 6.2370 | 6.3393 | 6.4415 | 6.5438 | 6.6460 | 6.7483 | 6.8505 | 6.9528 | 7.0550 | 7.1572 | 7.2595 | 7.3617 | 7.4640 | 7.5662 | 7.6685 |
| 870 | 6.2271 | 6.3292 | 6.4313 | 6.5334 | 6.6354 | 6.7375 | 6.8396 | 6.9417 | 7.0438 | 7.1459 | 7.2479 | 7.3500 | 7.4521 | 7.5542 | 7.6563 |
| 880 | 6.2171 | 6.3190 | 6.4210 | 6.5229 | 6.6248 | 6.7267 | 6.8286 | 6.9306 | 7.0325 | 7.1344 | 7.2363 | 7.3382 | 7.4402 | 7.5421 | 7.6440 |
| 890 | 6.2071 | 6.3088 | 6.4106 | 6.5123 | 6.6141 | 6.7158 | 6.8176 | 6.9193 | 7.0211 | 7.1228 | 7.2246 | 7.3264 | 7.4281 | 7.5299 | 7.6316 |
| 900 | 6.1969 | 6.2985 | 6.4001 | 6.5017 | 6.6033 | 6.7049 | 6.8065 | 6.9080 | 7.0096 | 7.1112 | 7.2128 | 7.3144 | 7.4160 | 7.5176 | 7.6192 |
| 910 | 6.1867 | 6.2881 | 6.3896 | 6.4910 | 6.5924 | 6.6938 | 6.7953 | 6.8967 | 6.9981 | 7.0995 | 7.2009 | 7.3024 | 7.4038 | 7.5052 | 7.6066 |
| 920 | 6.1765 | 6.2777 | 6.3790 | 6.4802 | 6.5815 | 6.6827 | 6.7840 | 6.8853 | 6.9865 | 7.0878 | 7.1890 | 7.2903 | 7.3915 | 7.4928 | 7.5940 |
| 930 | 6.1662 | 6.2673 | 6.3683 | 6.4694 | 6.5705 | 6.6716 | 6.7727 | 6.8738 | 6.9749 | 7.0759 | 7.1770 | 7.2781 | 7.3792 | 7.4803 | 7.5814 |
| 940 | 6.1558 | 6.2567 | 6.3577 | 6.4586 | 6.5595 | 6.6604 | 6.7613 | 6.8622 | 6.9631 | 7.0641 | 7.1650 | 7.2659 | 7.3668 | 7.4677 | 7.5686 |
| 950 | 6.1454 | 6.2462 | 6.3469 | 6.4477 | 6.5484 | 6.6491 | 6.7499 | 6.8506 | 6.9514 | 7.0521 | 7.1529 | 7.2536 | 7.3544 | 7.4551 | 7.5558 |
| 960 | 6.1350 | 6.2356 | 6.3361 | 6.4367 | 6.5373 | 6.6379 | 6.7384 | 6.8390 | 6.9396 | 7.0401 | 7.1407 | 7.2413 | 7.3419 | 7.4424 | 7.5430 |
| 970 | 6.1245 | 6.2249 | 6.3253 | 6.4257 | 6.5261 | 6.6265 | 6.7269 | 6.8273 | 6.9277 | 7.0281 | 7.1285 | 7.2289 | 7.3293 | 7.4297 | 7.5301 |
| 980 | 6.1140 | 6.2142 | 6.3144 | 6.4147 | 6.5149 | 6.6151 | 6.7154 | 6.8156 | 6.9158 | 7.0161 | 7.1163 | 7.2165 | 7.3167 | 7.4170 | 7.5172 |
| 990 | 6.1034 | 6.2035 | 6.3036 | 6.4036 | 6.5037 | 6.6037 | 6.7038 | 6.8038 | 6.9039 | 7.0039 | 7.1040 | 7.2041 | 7.3041 | 7.4042 | 7.5042 |
| 1000 | 6.0929 | 6.1927 | 6.2926 | 6.3925 | 6.4924 | 6.5923 | 6.6922 | 6.7920 | 6.8919 | 6.9918 | 7.0917 | 7.1916 | 7.2915 | 7.3913 | 7.4912 |
| <i>E</i> (keV) | Os | Ir | Pt | Au | Hg | Tl | Pb | Bi | Po | At | Rn | Fr | Ra | Ac | Th |
| 1 | 0.1055 | 0.1069 | 0.1082 | 0.1096 | 0.1110 | 0.1124 | 0.1138 | 0.1152 | 0.1166 | 0.1180 | 0.1193 | 0.1207 | 0.1221 | 0.1235 | 0.1249 |
| 2 | 0.2092 | 0.2120 | 0.2147 | 0.2175 | 0.2202 | 0.2230 | 0.2257 | 0.2285 | 0.2312 | 0.2340 | 0.2367 | 0.2395 | 0.2422 | 0.2450 | 0.2478 |
| 3 | 0.3113 | 0.3154 | 0.3195 | 0.3236 | 0.3277 | 0.3318 | 0.3359 | 0.3400 | 0.3441 | 0.3481 | 0.3522 | 0.3563 | 0.3604 | 0.3645 | 0.3686 |
| 4 | 0.4117 | 0.4171 | 0.4226 | 0.4280 | 0.4334 | 0.4388 | 0.4442 | 0.4496 | 0.4551 | 0.4605 | 0.4659 | 0.4713 | 0.4767 | 0.4821 | 0.4876 |
| 5 | 0.5105 | 0.5173 | 0.5240 | 0.5307 | 0.5374 | 0.5441 | 0.5508 | 0.5576 | 0.5643 | 0.5710 | 0.5777 | 0.5844 | 0.5911 | 0.5979 | 0.6046 |
| 6 | 0.6078 | 0.6158 | 0.6238 | 0.6318 | 0.6398 | 0.6478 | 0.6558 | 0.6638 | 0.6717 | 0.6797 | 0.6877 | 0.6957 | 0.7037 | 0.7117 | 0.7197 |
| 7 | 0.7035 | 0.7127 | 0.7220 | 0.7312 | 0.7405 | 0.7497 | 0.7590 | 0.7683 | 0.7775 | 0.7868 | 0.7960 | 0.8053 | 0.8145 | 0.8238 | 0.8330 |
| 8 | 0.7976 | 0.8081 | 0.8186 | 0.8291 | 0.8396 | 0.8501 | 0.8606 | 0.8711 | 0.8816 | 0.8921 | 0.9026 | 0.9131 | 0.9236 | 0.9341 | 0.9446 |
| 9 | 0.8903 | 0.9020 | 0.9138 | 0.9255 | 0.9372 | 0.9489 | 0.9606 | 0.9723 | 0.9840 | 0.9958 | 1.0075 | 1.0192 | 1.0309 | 1.0426 | 1.0543 |
| 10 | 0.9816 | 0.9945 | 1.0074 | 1.0203 | 1.0332 | 1.0461 | 1.0590 | 1.0720 | 1.0849 | 1.0978 | 1.1107 | 1.1236 | 1.1365 | 1.1495 | 1.1624 |
| 20 | 1.8196 | 1.8436 | 1.8675 | 1.8915 | 1.9154 | 1.9394 | 1.9633 | 1.9872 | 2.0112 | 2.0351 | 2.0591 | 2.0830 | 2.1070 | 2.1309 | 2.1548 |
| 30 | 2.5396 | 2.5730 | 2.6064 | 2.6398 | 2.6732 | 2.7067 | 2.7401 | 2.7735 | 2.8069 | 2.8403 | 2.8737 | 2.9071 | 2.9406 | 2.9740 | 3.0074 |
| 40 | 3.1615 | 3.2031 | 3.2447 | 3.2863 | 3.3278 | 3.3694 | 3.4110 | 3.4526 | 3.4942 | 3.5358 | 3.5774 | 3.6190 | 3.6606 | 3.7022 | 3.7438 |
| 50 | 3.7014 | 3.7501 | 3.7988 | 3.8475 | 3.8962 | 3.9449 | 3.9937 | 4.0424 | 4.0911 | 4.1398 | 4.1885 | 4.2372 | 4.2859 | 4.3346 | 4.3833 |
| 60 | 4.1725 | 4.2274 | 4.2823 | 4.3372 | 4.3922 | 4.4471 | 4.5020 | 4.5569 | 4.6118 | 4.6667 | 4.7216 | 4.7765 | 4.8314 | 4.8863 | 4.9412 |
| 70 | 4.5854 | 4.6457 | 4.7061 | 4.7664 | 4.8267 | 4.8871 | 4.9474 | 5.0077 | 5.0681 | 5.1284 | 5.1887 | 5.2491 | 5.3094 | 5.3697 | 5.4301 |
| 80 | 4.9487 | 5.0138 | 5.0789 | 5.1441 | 5.2092 | 5.2743 | 5.3394 | 5.4045 | 5.4696 | 5.5347 | 5.5999 | 5.6650 | 5.7301 | 5.7952 | 5.8603 |
| 90 | 5.2696 | 5.3390 | 5.4083 | 5.4776 | 5.5470 | 5.6163 | 5.6857 | 5.7550 | 5.8243 | 5.8937 | 5.9630 | 6.0323 | 6.1017 | 6.1710 | 6.2403 |
| 100 | 5.5541 | 5.6272 | 5.7003 | 5.7733 | 5.8464 | 5.9195 | 5.9926 | 6.0657 | 6.1388 | 6.2118 | 6.2849 | 6.3580 | 6.4311 | 6.5042 | 6.5772 |
| 110 | 5.8071 | 5.8835 | 5.9599 | 6.0363 | 6.1127 | 6.1892 | 6.2656 | 6.3420 | 6.4184 | 6.4948 | 6.5712 | 6.6476 | 6.7240 | 6.8004 | 6.8768 |
| 120 | 6.0328 | 6.1122 | 6.1915 | 6.2709 | 6.3503 | 6.4297 | 6.5091 | 6.5884 | 6.6678 | 6.7472 | 6.8266 | 6.9060 | 6.9853 | 7.0647 | 7.1441 |
| 130 | 6.2347 | 6.3167 | 6.3987 | 6.4808 | 6.5628 | 6.6448 | 6.7269 | 6.8089 | 6.8909 | 6.9730 | 7.0550 | 7.1370 | 7.2191 | 7.3011 | 7.3831 |
| 140 | 6.4157 | 6.5001 | 6.5845 | 6.6689 | 6.7533 | 6.8378 | 6.9222 | 7.0066 | 7.0910 | 7.1754 | 7.2598 | 7.3443 | 7.4287 | 7.5131 | 7.5975 |
| 150 | 6.5784 | 6.6649 | 6.7515 | 6.8380 | 6.9246 | 7.0112 | 7.0977 | 7.1843 | 7.2708 | 7.3574 | 7.4439 | 7.5305 | 7.6171 | 7.7036 | 7.7902 |
| 160 | 6.7249 | 6.8134 | 6.9019 | 6.9904 | 7.0789 | 7.1673 | 7.2558 | 7.3443 | 7.4328 | 7.5213 | 7.6098 | 7.6983 | 7.7867 | 7.8752 | 7.9637 |
| 170 | 6.8571 | 6.9474 | 7.0376 | 7.1278 | 7.2180 | 7.3083 | 7.3985 | 7.4887 | 7.5790 | 7.6692 | 7.7594 | 7.8496 | 7.9399 | 8.0301 | 8.1203 |
| 180 | 6.9767 | 7.0685 | 7.1603 | 7.2521 | 7.3439 | 7.4357 | 7.5275 | 7.6193 | 7.7111 | 7.8029 | 7.8947 | 7.9865 | 8.0783 | 8.1701 | 8.2618 |
| 190 | 7.0849 | 7.1781 | 7.2713 | 7.3645 | 7.4578 | 7.5510 | 7.6442 | 7.7374 | 7.8306 | 7.9239 | 8.0171 | 8.1103 | 8.2035 | 8.2968 | 8.3900 |
| 200 | 7.1829 | 7.2775 | 7.3720 | 7.4665 | 7.5610 | 7.6555 | 7.7500 | 7.8445 | 7.9390 | 8.0336 | 8.1281 | 8.2226 | 8.3171 | 8.4116 | 8.5061 |
| 210 | 7.2719 | 7.3676 | 7.4633 | 7.5590 | 7.6547 | 7.7504 | 7.8460 | 7.9417 | 8.0374 | 8.1331 | 8.2288 | 8.3245 | 8.4201 | 8.5158 | 8.6115 |

TABLE 1. Compton energy absorption cross sections (b/atom) in the energy region 1 keV–1 MeV—Continued

| $E(\text{keV})$ | Os | Ir | Pt | Au | Hg | Tl | Pb | Bi | Po | At | Rn | Fr | Ra | Ac | Th |
|-----------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 220 | 7.3528 | 7.4495 | 7.5463 | 7.6430 | 7.7398 | 7.8365 | 7.9333 | 8.0300 | 8.1267 | 8.2235 | 8.3202 | 8.4170 | 8.5137 | 8.6105 | 8.7072 |
| 230 | 7.4262 | 7.5240 | 7.6217 | 7.7194 | 7.8171 | 7.9148 | 8.0125 | 8.1102 | 8.2080 | 8.3057 | 8.4034 | 8.5011 | 8.5988 | 8.6965 | 8.7942 |
| 240 | 7.4931 | 7.5916 | 7.6902 | 7.7888 | 7.8874 | 7.9860 | 8.0846 | 8.1832 | 8.2818 | 8.3804 | 8.4790 | 8.5776 | 8.6762 | 8.7748 | 8.8734 |
| 250 | 7.5538 | 7.6532 | 7.7526 | 7.8520 | 7.9514 | 8.0508 | 8.1502 | 8.2496 | 8.3490 | 8.4484 | 8.5478 | 8.6471 | 8.7465 | 8.8459 | 8.9453 |
| 260 | 7.6091 | 7.7093 | 7.8094 | 7.9095 | 8.0096 | 8.1097 | 8.2099 | 8.3100 | 8.4101 | 8.5102 | 8.6103 | 8.7105 | 8.8106 | 8.9107 | 9.0108 |
| 270 | 7.6594 | 7.7602 | 7.8610 | 7.9618 | 8.0626 | 8.1634 | 8.2641 | 8.3649 | 8.4657 | 8.5665 | 8.6673 | 8.7680 | 8.8688 | 8.9696 | 9.0704 |
| 280 | 7.7052 | 7.8066 | 7.9080 | 8.0094 | 8.1107 | 8.2121 | 8.3135 | 8.4149 | 8.5163 | 8.6177 | 8.7190 | 8.8204 | 8.9218 | 9.0232 | 9.1246 |
| 290 | 7.7468 | 7.8487 | 7.9507 | 8.0526 | 8.1545 | 8.2565 | 8.3584 | 8.4603 | 8.5623 | 8.6642 | 8.7661 | 8.8680 | 8.9700 | 9.0719 | 9.1738 |
| 300 | 7.7846 | 7.8870 | 7.9894 | 8.0919 | 8.1943 | 8.2967 | 8.3992 | 8.5016 | 8.6040 | 8.7064 | 8.8089 | 8.9113 | 9.0137 | 9.1162 | 9.2186 |
| 310 | 7.8189 | 7.9217 | 8.0246 | 8.1275 | 8.2304 | 8.3333 | 8.4361 | 8.5390 | 8.6419 | 8.7448 | 8.8477 | 8.9505 | 9.0534 | 9.1563 | 9.2592 |
| 320 | 7.8499 | 7.9532 | 8.0565 | 8.1598 | 8.2631 | 8.3664 | 8.4697 | 8.5730 | 8.6762 | 8.7795 | 8.8828 | 8.9861 | 9.0894 | 9.1927 | 9.2960 |
| 330 | 7.8780 | 7.9817 | 8.0854 | 8.1890 | 8.2927 | 8.3963 | 8.5000 | 8.6036 | 8.7073 | 8.8110 | 8.9146 | 9.0183 | 9.1219 | 9.2256 | 9.3293 |
| 340 | 7.9034 | 8.0074 | 8.1114 | 8.2154 | 8.3194 | 8.4234 | 8.5274 | 8.6314 | 8.7353 | 8.8393 | 8.9433 | 9.0473 | 9.1513 | 9.2553 | 9.3593 |
| 350 | 7.9263 | 8.0305 | 8.1348 | 8.2391 | 8.3434 | 8.4477 | 8.5520 | 8.6563 | 8.7606 | 8.8649 | 8.9692 | 9.0735 | 9.1778 | 9.2821 | 9.3864 |
| 360 | 7.9468 | 8.0513 | 8.1559 | 8.2604 | 8.3650 | 8.4696 | 8.5741 | 8.6787 | 8.7833 | 8.8878 | 8.9924 | 9.0970 | 9.2015 | 9.3061 | 9.4106 |
| 370 | 7.9651 | 8.0699 | 8.1747 | 8.2795 | 8.3843 | 8.4891 | 8.5939 | 8.6987 | 8.8035 | 8.9083 | 9.0131 | 9.1179 | 9.2228 | 9.3276 | 9.4324 |
| 380 | 7.9814 | 8.0865 | 8.1915 | 8.2965 | 8.4015 | 8.5065 | 8.6115 | 8.7166 | 8.8216 | 8.9266 | 9.0316 | 9.1366 | 9.2417 | 9.3467 | 9.4517 |
| 390 | 7.9959 | 8.1011 | 8.2063 | 8.3115 | 8.4167 | 8.5219 | 8.6272 | 8.7324 | 8.8376 | 8.9428 | 9.0480 | 9.1532 | 9.2584 | 9.3636 | 9.4688 |
| 400 | 8.0086 | 8.1140 | 8.2194 | 8.3248 | 8.4301 | 8.5355 | 8.6409 | 8.7463 | 8.8516 | 8.9570 | 9.0624 | 9.1678 | 9.2731 | 9.3785 | 9.4839 |
| 410 | 8.0197 | 8.1253 | 8.2308 | 8.3363 | 8.4418 | 8.5474 | 8.6529 | 8.7584 | 8.8639 | 8.9694 | 9.0750 | 9.1805 | 9.2860 | 9.3915 | 9.4971 |
| 420 | 8.0293 | 8.1350 | 8.2406 | 8.3463 | 8.4519 | 8.5576 | 8.6632 | 8.7689 | 8.8745 | 8.9802 | 9.0858 | 9.1915 | 9.2971 | 9.4028 | 9.5084 |
| 430 | 8.0375 | 8.1433 | 8.2491 | 8.3548 | 8.4606 | 8.5663 | 8.6721 | 8.7778 | 8.8836 | 8.9894 | 9.0951 | 9.2009 | 9.3066 | 9.4124 | 9.5181 |
| 440 | 8.0444 | 8.1503 | 8.2561 | 8.3620 | 8.4678 | 8.5737 | 8.6795 | 8.7854 | 8.8912 | 8.9971 | 9.1029 | 9.2087 | 9.3146 | 9.4204 | 9.5263 |
| 450 | 8.0501 | 8.1560 | 8.2619 | 8.3678 | 8.4738 | 8.5797 | 8.6856 | 8.7915 | 8.8975 | 9.0034 | 9.1093 | 9.2152 | 9.3211 | 9.4271 | 9.5330 |
| 460 | 8.0546 | 8.1606 | 8.2665 | 8.3725 | 8.4785 | 8.5845 | 8.6905 | 8.7965 | 8.9024 | 9.0084 | 9.1144 | 9.2204 | 9.3264 | 9.4323 | 9.5383 |
| 470 | 8.0580 | 8.1640 | 8.2701 | 8.3761 | 8.4821 | 8.5881 | 8.6942 | 8.8002 | 8.9062 | 9.0122 | 9.1183 | 9.2243 | 9.3303 | 9.4364 | 9.5424 |
| 480 | 8.0604 | 8.1665 | 8.2725 | 8.3786 | 8.4847 | 8.5907 | 8.6968 | 8.8028 | 8.9089 | 9.0150 | 9.1210 | 9.2271 | 9.3331 | 9.4392 | 9.5452 |
| 490 | 8.0619 | 8.1680 | 8.2741 | 8.3801 | 8.4862 | 8.5923 | 8.6984 | 8.8044 | 8.9105 | 9.0166 | 9.1227 | 9.2287 | 9.3348 | 9.4409 | 9.5470 |
| 500 | 8.0625 | 8.1686 | 8.2746 | 8.3807 | 8.4868 | 8.5929 | 8.6990 | 8.8051 | 8.9112 | 9.0172 | 9.1233 | 9.2294 | 9.3355 | 9.4416 | 9.5477 |
| 510 | 8.0622 | 8.1683 | 8.2744 | 8.3805 | 8.4866 | 8.5926 | 8.6987 | 8.8048 | 8.9109 | 9.0170 | 9.1230 | 9.2291 | 9.3352 | 9.4413 | 9.5474 |
| 520 | 8.0612 | 8.1673 | 8.2733 | 8.3794 | 8.4855 | 8.5915 | 8.6976 | 8.8037 | 8.9097 | 9.0158 | 9.1219 | 9.2279 | 9.3340 | 9.4401 | 9.5461 |
| 530 | 8.0594 | 8.1655 | 8.2715 | 8.3775 | 8.4836 | 8.5896 | 8.6957 | 8.8017 | 8.9078 | 9.0138 | 9.1199 | 9.2259 | 9.3319 | 9.4380 | 9.5440 |
| 540 | 8.0569 | 8.1629 | 8.2690 | 8.3750 | 8.4810 | 8.5870 | 8.6930 | 8.7990 | 8.9050 | 9.0110 | 9.1171 | 9.2231 | 9.3291 | 9.4351 | 9.5411 |
| 550 | 8.0538 | 8.1598 | 8.2658 | 8.3717 | 8.4777 | 8.5837 | 8.6896 | 8.7956 | 8.9016 | 9.0075 | 9.1135 | 9.2195 | 9.3255 | 9.4314 | 9.5374 |
| 560 | 8.0501 | 8.1560 | 8.2619 | 8.3678 | 8.4738 | 8.5797 | 8.6856 | 8.7915 | 8.8974 | 9.0034 | 9.1093 | 9.2152 | 9.3211 | 9.4271 | 9.5330 |
| 570 | 8.0457 | 8.1516 | 8.2575 | 8.3633 | 8.4692 | 8.5751 | 8.6809 | 8.7868 | 8.8927 | 8.9985 | 9.1044 | 9.2103 | 9.3161 | 9.4220 | 9.5279 |
| 580 | 8.0409 | 8.1467 | 8.2525 | 8.3583 | 8.4641 | 8.5699 | 8.6757 | 8.7815 | 8.8873 | 8.9931 | 9.0989 | 9.2047 | 9.3105 | 9.4163 | 9.5221 |
| 590 | 8.0355 | 8.1412 | 8.2469 | 8.3527 | 8.4584 | 8.5641 | 8.6699 | 8.7756 | 8.8813 | 8.9871 | 9.0928 | 9.1985 | 9.3042 | 9.4100 | 9.5157 |
| 600 | 8.0296 | 8.1353 | 8.2409 | 8.3466 | 8.4522 | 8.5579 | 8.6635 | 8.7692 | 8.8748 | 8.9805 | 9.0861 | 9.1918 | 9.2974 | 9.4031 | 9.5088 |
| 610 | 8.0233 | 8.1288 | 8.2344 | 8.3400 | 8.4456 | 8.5511 | 8.6567 | 8.7623 | 8.8678 | 8.9734 | 9.0790 | 9.1845 | 9.2901 | 9.3957 | 9.5013 |
| 620 | 8.0165 | 8.1220 | 8.2275 | 8.3330 | 8.4384 | 8.5439 | 8.6494 | 8.7549 | 8.8604 | 8.9658 | 9.0713 | 9.1768 | 9.2823 | 9.3878 | 9.4932 |
| 630 | 8.0093 | 8.1147 | 8.2201 | 8.3255 | 8.4309 | 8.5363 | 8.6417 | 8.7470 | 8.8524 | 8.9578 | 9.0632 | 9.1686 | 9.2740 | 9.3794 | 9.4847 |
| 640 | 8.0018 | 8.1071 | 8.2123 | 8.3176 | 8.4229 | 8.5282 | 8.6335 | 8.7388 | 8.8441 | 8.9494 | 9.0546 | 9.1599 | 9.2652 | 9.3705 | 9.4758 |
| 650 | 7.9938 | 8.0990 | 8.2042 | 8.3094 | 8.4146 | 8.5198 | 8.6249 | 8.7301 | 8.8353 | 8.9405 | 9.0457 | 9.1508 | 9.2560 | 9.3612 | 9.4664 |
| 660 | 7.9856 | 8.0906 | 8.1957 | 8.3008 | 8.4059 | 8.5109 | 8.6160 | 8.7211 | 8.8262 | 8.9312 | 9.0363 | 9.1414 | 9.2465 | 9.3515 | 9.4566 |
| 670 | 7.9770 | 8.0819 | 8.1869 | 8.2919 | 8.3968 | 8.5018 | 8.6067 | 8.7117 | 8.8167 | 8.9216 | 9.0266 | 9.1315 | 9.2365 | 9.3415 | 9.4464 |
| 680 | 7.9681 | 8.0729 | 8.1778 | 8.2826 | 8.3874 | 8.4923 | 8.5971 | 8.7020 | 8.8068 | 8.9117 | 9.0165 | 9.1213 | 9.2262 | 9.3310 | 9.4359 |
| 690 | 7.9589 | 8.0636 | 8.1683 | 8.2730 | 8.3778 | 8.4825 | 8.5872 | 8.6919 | 8.7966 | 8.9014 | 9.0061 | 9.1108 | 9.2155 | 9.3203 | 9.4250 |
| 700 | 7.9494 | 8.0540 | 8.1586 | 8.2632 | 8.3678 | 8.4724 | 8.5770 | 8.6816 | 8.7862 | 8.8908 | 8.9954 | 9.1000 | 9.2046 | 9.3092 | 9.4138 |
| 710 | 7.9397 | 8.0441 | 8.1486 | 8.2531 | 8.3575 | 8.4620 | 8.5665 | 8.6709 | 8.7754 | 8.8799 | 8.9844 | 9.0888 | 9.1933 | 9.2978 | 9.4022 |
| 720 | 7.9297 | 8.0340 | 8.1384 | 8.2427 | 8.3470 | 8.4514 | 8.5557 | 8.6600 | 8.7644 | 8.8687 | 8.9731 | 9.0774 | 9.1817 | 9.2861 | 9.3904 |
| 730 | 7.9195 | 8.0237 | 8.1279 | 8.2321 | 8.3363 | 8.4405 | 8.5447 | 8.6489 | 8.7531 | 8.8573 | 8.9615 | 9.0657 | 9.1699 | 9.2741 | 9.3783 |
| 740 | 7.9090 | 8.0131 | 8.1172 | 8.2212 | 8.3253 | 8.4294 | 8.5334 | 8.6375 | 8.7416 | 8.8456 | 8.9497 | 9.0538 | 9.1578 | 9.2619 | 9.3660 |
| 750 | 7.8984 | 8.0023 | 8.1063 | 8.2102 | 8.3141 | 8.4180 | 8.5220 | 8.6259 | 8.7298 | 8.8337 | 8.9377 | 9.0416 | 9.1455 | 9.2495 | 9.3534 |
| 760 | 7.8876 | 7.9914 | 8.0951 | 8.1989 | 8.3027 | 8.4065 | 8.5103 | 8.6141 | 8.7179 | 8.8216 | 8.9254 | 9.0292 | 9.1330 | 9.2368 | 9.3406 |
| 770 | 7.8766 | 7.9802 | 8.0838 | 8.1875 | 8.2911 | 8.3948 | 8.4984 | 8.6020 | 8.7057 | 8.8093 | 8.9130 | 9.0166 | 9.1202 | 9.2239 | 9.3275 |
| 780 | 7.8654 | 7.9689 | 8.0724 | 8.1759 | 8.2793 | 8.3828 | 8.4863 | 8.5898 | 8.6933 | 8.7968 | 8.9003 | 9.0038 | 9.1073 | 9.2108 | 9.3143 |
| 790 | 7.8540 | 7.9574 | 8.0607 | 8.1641 | 8.2674 | 8.3707 | 8.4741 | 8.5774 | 8.6808 | 8.7841 | 8.8875 | 8.9908 | 9.0941 | 9.1975 | 9.3008 |
| 800 | 7.8425 | 7.9457 | 8.0489 | 8.1521 | 8.2553 | 8.3585 | 8.4617 | 8.5649 | 8.6681 | 8.7712 | 8.8744 | 8.9776 | 9.0808 | 9.1840 | 9.2872 |
| 810 | 7.8309 | 7.9339 | 8.0369 | 8.1400 | 8.2430 | 8.3461 | 8.4491 | 8.5521 | 8.6552 | 8.7582 | 8.8613 | 8.9643 | 9.0673 | 9.1704 | 9.2734 |
| 820 | 7.8191 | 7.9220 | 8.0249 | 8.1277 | 8.2306 | 8.3335 | 8.4364 | 8.5393 | 8.6421 | 8.7450 | 8.8479 | 8.9508 | 9.0537 | 9.1566 | 9.2594 |
| 830 | 7.8072 | 7.9099 | 8.0126 | 8.1153 | 8.2181 | 8.3208 | 8.4235 | 8.5263 | 8.6290 | 8.7317 | 8.8344 | 8.9372 | 9.0399 | 9.1426 | 9.2453 |
| 840 | 7.7951 | 7.8977 | 8.0003 | 8.1028 | 8.2054 | 8.3080 | 8.4105 | 8.5131 | 8.6157 | 8.7182 | 8.8208 | 8.9234 | 9.0259 | 9.1285 | 9.2311 |
| 850 | 7.7830 | 7.8854 | 7.9878 | 8.0902 | 8.1926 | 8.2950 | 8.3974 | 8.4998 | 8.6022 | 8.7047 | 8.8071 | 8.9095 | 9.0119 | 9.1143 | 9.2167 |
| 860 | 7.7707 | 7.8730 | 7.9752 | 8.0775 | 8.1797 | 8.2820 | 8.3842 | 8.4864 | 8.5887 | 8.6909 | 8.7932 | 8.8954 | 8.9977 | 9.0999 | 9.2022 |

TABLE 1. Compton energy absorption cross sections (b/atom) in the energy region 1 keV–1 MeV—Continued

| <i>E</i> (keV) | Os | Ir | Pt | Au | Hg | Tl | Pb | Bi | Po | At | Rn | Fr | Ra | Ac | Th |
|----------------|--------|--------|--------|--------|--------|---------|---------|---------|---------|---------|--------|--------|--------|--------|--------|
| 870 | 7.7584 | 7.8604 | 7.9625 | 8.0646 | 8.1667 | 8.2688 | 8.3709 | 8.4730 | 8.5750 | 8.6771 | 8.7792 | 8.8813 | 8.9834 | 9.0855 | 9.1875 |
| 880 | 7.7459 | 7.8478 | 7.9498 | 8.0517 | 8.1536 | 8.2555 | 8.3574 | 8.4594 | 8.5613 | 8.6632 | 8.7651 | 8.8670 | 8.9690 | 9.0709 | 9.1728 |
| 890 | 7.7334 | 7.8351 | 7.9369 | 8.0386 | 8.1404 | 8.2421 | 8.3439 | 8.4457 | 8.5474 | 8.6492 | 8.7509 | 8.8527 | 8.9544 | 9.0562 | 9.1579 |
| 900 | 7.7208 | 7.8223 | 7.9239 | 8.0255 | 8.1271 | 8.2287 | 8.3303 | 8.4319 | 8.5335 | 8.6351 | 8.7366 | 8.8382 | 8.9398 | 9.0414 | 9.1430 |
| 910 | 7.7081 | 7.8095 | 7.9109 | 8.0123 | 8.1137 | 8.2152 | 8.3166 | 8.4180 | 8.5194 | 8.6208 | 8.7223 | 8.8237 | 8.9251 | 9.0265 | 9.1280 |
| 920 | 7.6953 | 7.7965 | 7.8978 | 7.9990 | 8.1003 | 8.2016 | 8.3028 | 8.4041 | 8.5053 | 8.6066 | 8.7078 | 8.8091 | 8.9103 | 9.0116 | 9.1128 |
| 930 | 7.6824 | 7.7835 | 7.8846 | 7.9857 | 8.0868 | 8.1879 | 8.2890 | 8.3900 | 8.4911 | 8.5922 | 8.6933 | 8.7944 | 8.8955 | 8.9965 | 9.0976 |
| 940 | 7.6695 | 7.7705 | 7.8714 | 7.9723 | 8.0732 | 8.1741 | 8.2750 | 8.3760 | 8.4769 | 8.5778 | 8.6787 | 8.7796 | 8.8805 | 8.9814 | 9.0824 |
| 950 | 7.6566 | 7.7573 | 7.8581 | 7.9588 | 8.0596 | 8.1603 | 8.2611 | 8.3618 | 8.4626 | 8.5633 | 8.6640 | 8.7648 | 8.8655 | 8.9663 | 9.0670 |
| 960 | 7.6436 | 7.7442 | 7.8447 | 7.9453 | 8.0459 | 8.1465 | 8.2470 | 8.3476 | 8.4482 | 8.5487 | 8.6493 | 8.7499 | 8.8505 | 8.9510 | 9.0516 |
| 970 | 7.6305 | 7.7309 | 7.8313 | 7.9317 | 8.0321 | 8.1325 | 8.2329 | 8.3333 | 8.4337 | 8.5341 | 8.6345 | 8.7349 | 8.8353 | 8.9358 | 9.0362 |
| 980 | 7.6174 | 7.7177 | 7.8179 | 7.9181 | 8.0183 | 8.1186 | 8.2188 | 8.3190 | 8.4193 | 8.5195 | 8.6197 | 8.7199 | 8.8202 | 8.9204 | 9.0206 |
| 990 | 7.6043 | 7.7043 | 7.8044 | 7.9045 | 8.0045 | 8.1046 | 8.2046 | 8.3047 | 8.4047 | 8.5048 | 8.6048 | 8.7049 | 8.8050 | 8.9050 | 9.0051 |
| 1000 | 7.5911 | 7.6910 | 7.7909 | 7.8908 | 7.9906 | 8.0905 | 8.1904 | 8.2903 | 8.3902 | 8.4901 | 8.5899 | 8.6898 | 8.7897 | 8.8896 | 8.9895 |
| <i>E</i> (keV) | Pa | U | Np | Pu | Am | Cm | Bk | Cf | Es | Fm | | | | | |
| 1 | 0.1263 | 0.1277 | 0.1291 | 0.1304 | 0.1318 | 0.1332 | 0.1346 | 0.1360 | 0.1374 | 0.1388 | | | | | |
| 2 | 0.2505 | 0.2533 | 0.2560 | 0.2588 | 0.2615 | 0.2643 | 0.2670 | 0.2698 | 0.2725 | 0.2753 | | | | | |
| 3 | 0.3727 | 0.3768 | 0.3809 | 0.3850 | 0.3891 | 0.3932 | 0.3973 | 0.4014 | 0.4055 | 0.4096 | | | | | |
| 4 | 0.4930 | 0.4984 | 0.5038 | 0.5092 | 0.5146 | 0.5201 | 0.5255 | 0.5309 | 0.5363 | 0.5417 | | | | | |
| 5 | 0.6113 | 0.6180 | 0.6247 | 0.6314 | 0.6382 | 0.6449 | 0.6516 | 0.6583 | 0.6650 | 0.6718 | | | | | |
| 6 | 0.7277 | 0.7357 | 0.7437 | 0.7517 | 0.7597 | 0.7677 | 0.7757 | 0.7837 | 0.7917 | 0.7997 | | | | | |
| 7 | 0.8423 | 0.8516 | 0.8608 | 0.8701 | 0.8793 | 0.8886 | 0.8978 | 0.9071 | 0.9164 | 0.9256 | | | | | |
| 8 | 0.9551 | 0.9656 | 0.9761 | 0.9866 | 0.9970 | 1.0075 | 1.0180 | 1.0285 | 1.0390 | 1.0495 | | | | | |
| 9 | 1.0660 | 1.0778 | 1.0895 | 1.1012 | 1.1129 | 1.1246 | 1.1363 | 1.1481 | 1.1598 | 1.1715 | | | | | |
| 10 | 1.1753 | 1.1882 | 1.2011 | 1.2140 | 1.2269 | 1.2399 | 1.2528 | 1.2657 | 1.2786 | 1.2915 | | | | | |
| 20 | 2.1788 | 2.2027 | 2.2267 | 2.2506 | 2.2746 | 2.2985 | 2.3224 | 2.3464 | 2.3703 | 2.3943 | | | | | |
| 30 | 3.0408 | 3.0742 | 3.1076 | 3.1411 | 3.1745 | 3.2079 | 3.2413 | 3.2747 | 3.3081 | 3.3415 | | | | | |
| 40 | 3.7854 | 3.8270 | 3.8686 | 3.9102 | 3.9518 | 3.9934 | 4.0350 | 4.0766 | 4.1182 | 4.1598 | | | | | |
| 50 | 4.4320 | 4.4807 | 4.5294 | 4.5781 | 4.6268 | 4.6755 | 4.7242 | 4.7729 | 4.8216 | 4.8703 | | | | | |
| 60 | 4.9961 | 5.0510 | 5.1059 | 5.1608 | 5.2157 | 5.2706 | 5.3255 | 5.3804 | 5.4353 | 5.4902 | | | | | |
| 70 | 5.4904 | 5.5508 | 5.6111 | 5.6714 | 5.7318 | 5.7921 | 5.8524 | 5.9128 | 5.9731 | 6.0334 | | | | | |
| 80 | 5.9254 | 5.9905 | 6.0557 | 6.1208 | 6.1859 | 6.2510 | 6.3161 | 6.3812 | 6.4463 | 6.5115 | | | | | |
| 90 | 6.3097 | 6.3790 | 6.4484 | 6.5177 | 6.5870 | 6.6564 | 6.7257 | 6.7950 | 6.8644 | 6.9337 | | | | | |
| 100 | 6.6503 | 6.7234 | 6.7965 | 6.8696 | 6.9426 | 7.0157 | 7.0888 | 7.1619 | 7.2350 | 7.3080 | | | | | |
| 110 | 6.9532 | 7.0297 | 7.1061 | 7.1825 | 7.2589 | 7.3353 | 7.4117 | 7.4881 | 7.5645 | 7.6409 | | | | | |
| 120 | 7.2235 | 7.3028 | 7.3822 | 7.4616 | 7.5410 | 7.6204 | 7.6997 | 7.7791 | 7.8585 | 7.9379 | | | | | |
| 130 | 7.4652 | 7.5472 | 7.6292 | 7.7113 | 7.7933 | 7.8753 | 7.9574 | 8.0394 | 8.1215 | 8.2035 | | | | | |
| 140 | 7.6819 | 7.7663 | 7.8508 | 7.9352 | 8.0196 | 8.1040 | 8.1884 | 8.2728 | 8.3573 | 8.4417 | | | | | |
| 150 | 7.8767 | 7.9633 | 8.0498 | 8.1364 | 8.2230 | 8.3095 | 8.3961 | 8.4826 | 8.5692 | 8.6558 | | | | | |
| 160 | 8.0522 | 8.1407 | 8.2292 | 8.3177 | 8.4061 | 8.4946 | 8.5831 | 8.6716 | 8.7601 | 8.8486 | | | | | |
| 170 | 8.2105 | 8.3008 | 8.3910 | 8.4812 | 8.5714 | 8.6617 | 8.7519 | 8.8421 | 8.9323 | 9.0226 | | | | | |
| 180 | 8.3536 | 8.4454 | 8.5372 | 8.6290 | 8.7208 | 8.8126 | 8.9044 | 8.9962 | 9.0880 | 9.1798 | | | | | |
| 190 | 8.4832 | 8.5764 | 8.6696 | 8.7629 | 8.8561 | 8.9493 | 9.0425 | 9.1358 | 9.2290 | 9.3222 | | | | | |
| 200 | 8.6006 | 8.6951 | 8.7897 | 8.8842 | 8.9787 | 9.0732 | 9.1677 | 9.2622 | 9.3567 | 9.4512 | | | | | |
| 210 | 8.7072 | 8.8029 | 8.8986 | 8.9942 | 9.0899 | 9.1856 | 9.2813 | 9.3770 | 9.4727 | 9.5683 | | | | | |
| 220 | 8.8040 | 8.9007 | 8.9975 | 9.0942 | 9.1910 | 9.2877 | 9.3845 | 9.4812 | 9.5780 | 9.6747 | | | | | |
| 230 | 8.8919 | 8.9897 | 9.0874 | 9.1851 | 9.2828 | 9.3805 | 9.4782 | 9.5759 | 9.6737 | 9.7714 | | | | | |
| 240 | 8.9719 | 9.0705 | 9.1691 | 9.2677 | 9.3663 | 9.4649 | 9.5635 | 9.6621 | 9.7607 | 9.8593 | | | | | |
| 250 | 9.0447 | 9.1441 | 9.2435 | 9.3429 | 9.4423 | 9.5417 | 9.6411 | 9.7405 | 9.8399 | 9.9393 | | | | | |
| 260 | 9.1109 | 9.2111 | 9.3112 | 9.4113 | 9.5114 | 9.6115 | 9.7117 | 9.8118 | 9.9119 | 10.0120 | | | | | |
| 270 | 9.1712 | 9.2720 | 9.3727 | 9.4735 | 9.5743 | 9.6751 | 9.7759 | 9.8767 | 9.9774 | 10.0782 | | | | | |
| 280 | 9.2260 | 9.3274 | 9.4287 | 9.5301 | 9.6315 | 9.7329 | 9.8343 | 9.9357 | 10.0370 | 10.1384 | | | | | |
| 290 | 9.2758 | 9.3777 | 9.4796 | 9.5816 | 9.6835 | 9.7854 | 9.8874 | 9.9893 | 10.0912 | 10.1932 | | | | | |
| 300 | 9.3210 | 9.4234 | 9.5259 | 9.6283 | 9.7307 | 9.8332 | 9.9356 | 10.0380 | 10.1404 | 10.2429 | | | | | |
| 310 | 9.3621 | 9.4649 | 9.5678 | 9.6707 | 9.7736 | 9.8765 | 9.9793 | 10.0822 | 10.1851 | 10.2880 | | | | | |
| 320 | 9.3993 | 9.5026 | 9.6058 | 9.7091 | 9.8124 | 9.9157 | 10.0190 | 10.1223 | 10.2256 | 10.3289 | | | | | |
| 330 | 9.4329 | 9.5366 | 9.6402 | 9.7439 | 9.8475 | 9.9512 | 10.0549 | 10.1585 | 10.2622 | 10.3658 | | | | | |
| 340 | 9.4633 | 9.5673 | 9.6713 | 9.7753 | 9.8793 | 9.9833 | 10.0872 | 10.1912 | 10.2952 | 10.3992 | | | | | |
| 350 | 9.4906 | 9.5949 | 9.6992 | 9.8035 | 9.9078 | 10.0121 | 10.1164 | 10.2207 | 10.3250 | 10.4293 | | | | | |
| 360 | 9.5152 | 9.6198 | 9.7243 | 9.8289 | 9.9335 | 10.0380 | 10.1426 | 10.2471 | 10.3517 | 10.4563 | | | | | |
| 370 | 9.5372 | 9.6420 | 9.7468 | 9.8516 | 9.9564 | 10.0612 | 10.1660 | 10.2708 | 10.3756 | 10.4804 | | | | | |
| 380 | 9.5567 | 9.6617 | 9.7668 | 9.8718 | 9.9768 | 10.0818 | 10.1868 | 10.2918 | 10.3969 | 10.5019 | | | | | |
| 390 | 9.5740 | 9.6792 | 9.7845 | 9.8897 | 9.9949 | 10.1001 | 10.2053 | 10.3105 | 10.4157 | 10.5209 | | | | | |

TABLE 1. Compton energy absorption cross sections (b/atom) in the energy region 1 keV–1 MeV—Continued

| <i>E</i> (keV) | Pa | U | Np | Pu | Am | Cm | Bk | Cf | Es | Fm |
|----------------|--------|--------|--------|--------|---------|---------|---------|---------|---------|---------|
| 400 | 9.5893 | 9.6947 | 9.8000 | 9.9054 | 10.0108 | 10.1162 | 10.2215 | 10.3269 | 10.4323 | 10.5377 |
| 410 | 9.6026 | 9.7081 | 9.8136 | 9.9192 | 10.0247 | 10.1302 | 10.2357 | 10.3412 | 10.4468 | 10.5523 |
| 420 | 9.6141 | 9.7197 | 9.8254 | 9.9310 | 10.0367 | 10.1423 | 10.2480 | 10.3536 | 10.4593 | 10.5649 |
| 430 | 9.6239 | 9.7297 | 9.8354 | 9.9412 | 10.0469 | 10.1527 | 10.2584 | 10.3642 | 10.4700 | 10.5757 |
| 440 | 9.6321 | 9.7380 | 9.8438 | 9.9497 | 10.0555 | 10.1614 | 10.2672 | 10.3731 | 10.4789 | 10.5848 |
| 450 | 9.6389 | 9.7448 | 9.8508 | 9.9567 | 10.0626 | 10.1685 | 10.2744 | 10.3804 | 10.4863 | 10.5922 |
| 460 | 9.6443 | 9.7503 | 9.8563 | 9.9622 | 10.0682 | 10.1742 | 10.2802 | 10.3862 | 10.4922 | 10.5981 |
| 470 | 9.6484 | 9.7544 | 9.8605 | 9.9665 | 10.0725 | 10.1785 | 10.2846 | 10.3906 | 10.4966 | 10.6026 |
| 480 | 9.6513 | 9.7574 | 9.8634 | 9.9695 | 10.0755 | 10.1816 | 10.2876 | 10.3937 | 10.4998 | 10.6058 |
| 490 | 9.6531 | 9.7591 | 9.8652 | 9.9713 | 10.0774 | 10.1834 | 10.2895 | 10.3956 | 10.5017 | 10.6078 |
| 500 | 9.6538 | 9.7598 | 9.8659 | 9.9720 | 10.0781 | 10.1842 | 10.2903 | 10.3964 | 10.5024 | 10.6085 |
| 510 | 9.6535 | 9.7595 | 9.8656 | 9.9717 | 10.0778 | 10.1839 | 10.2899 | 10.3960 | 10.5021 | 10.6082 |
| 520 | 9.6522 | 9.7583 | 9.8643 | 9.9704 | 10.0765 | 10.1825 | 10.2886 | 10.3947 | 10.5008 | 10.6068 |
| 530 | 9.6501 | 9.7561 | 9.8622 | 9.9682 | 10.0743 | 10.1803 | 10.2863 | 10.3924 | 10.4984 | 10.6045 |
| 540 | 9.6471 | 9.7531 | 9.8591 | 9.9652 | 10.0712 | 10.1772 | 10.2832 | 10.3892 | 10.4952 | 10.6012 |
| 550 | 9.6434 | 9.7493 | 9.8553 | 9.9613 | 10.0673 | 10.1732 | 10.2792 | 10.3852 | 10.4911 | 10.5971 |
| 560 | 9.6389 | 9.7448 | 9.8507 | 9.9567 | 10.0626 | 10.1685 | 10.2744 | 10.3803 | 10.4863 | 10.5922 |
| 570 | 9.6337 | 9.7396 | 9.8454 | 9.9513 | 10.0572 | 10.1630 | 10.2689 | 10.3748 | 10.4806 | 10.5865 |
| 580 | 9.6279 | 9.7337 | 9.8395 | 9.9453 | 10.0511 | 10.1569 | 10.2627 | 10.3685 | 10.4743 | 10.5801 |
| 590 | 9.6214 | 9.7272 | 9.8329 | 9.9386 | 10.0444 | 10.1501 | 10.2558 | 10.3615 | 10.4673 | 10.5730 |
| 600 | 9.6144 | 9.7201 | 9.8257 | 9.9314 | 10.0370 | 10.1427 | 10.2483 | 10.3540 | 10.4596 | 10.5653 |
| 610 | 9.6068 | 9.7124 | 9.8180 | 9.9235 | 10.0291 | 10.1347 | 10.2402 | 10.3458 | 10.4514 | 10.5569 |
| 620 | 9.5987 | 9.7042 | 9.8097 | 9.9152 | 10.0206 | 10.1261 | 10.2316 | 10.3371 | 10.4426 | 10.5480 |
| 630 | 9.5901 | 9.6955 | 9.8009 | 9.9063 | 10.0117 | 10.1171 | 10.2224 | 10.3278 | 10.4332 | 10.5386 |
| 640 | 9.5811 | 9.6864 | 9.7916 | 9.8969 | 10.0022 | 10.1075 | 10.2128 | 10.3181 | 10.4234 | 10.5286 |
| 650 | 9.5716 | 9.6768 | 9.7819 | 9.8871 | 9.9923 | 10.0975 | 10.2027 | 10.3079 | 10.4130 | 10.5182 |
| 660 | 9.5617 | 9.6667 | 9.7718 | 9.8769 | 9.9820 | 10.0870 | 10.1921 | 10.2972 | 10.4023 | 10.5073 |
| 670 | 9.5514 | 9.6563 | 9.7613 | 9.8663 | 9.9712 | 10.0762 | 10.1811 | 10.2861 | 10.3911 | 10.4960 |
| 680 | 9.5407 | 9.6456 | 9.7504 | 9.8552 | 9.9601 | 10.0649 | 10.1698 | 10.2746 | 10.3795 | 10.4843 |
| 690 | 9.5297 | 9.6344 | 9.7391 | 9.8439 | 9.9486 | 10.0533 | 10.1580 | 10.2627 | 10.3675 | 10.4722 |
| 700 | 9.5184 | 9.6230 | 9.7275 | 9.8321 | 9.9367 | 10.0413 | 10.1459 | 10.2505 | 10.3551 | 10.4597 |
| 710 | 9.5067 | 9.6112 | 9.7156 | 9.8201 | 9.9246 | 10.0290 | 10.1335 | 10.2380 | 10.3425 | 10.4469 |
| 720 | 9.4948 | 9.5991 | 9.7034 | 9.8078 | 9.9121 | 10.0164 | 10.1208 | 10.2251 | 10.3295 | 10.4338 |
| 730 | 9.4825 | 9.5867 | 9.6909 | 9.7951 | 9.8993 | 10.0035 | 10.1077 | 10.2120 | 10.3162 | 10.4204 |
| 740 | 9.4700 | 9.5741 | 9.6782 | 9.7822 | 9.8863 | 9.9904 | 10.0944 | 10.1985 | 10.3026 | 10.4066 |
| 750 | 9.4573 | 9.5612 | 9.6652 | 9.7691 | 9.8730 | 9.9769 | 10.0809 | 10.1848 | 10.2887 | 10.3926 |
| 760 | 9.4443 | 9.5481 | 9.6519 | 9.7557 | 9.8595 | 9.9633 | 10.0670 | 10.1708 | 10.2746 | 10.3784 |
| 770 | 9.4312 | 9.5348 | 9.6384 | 9.7421 | 9.8457 | 9.9493 | 10.0530 | 10.1566 | 10.2603 | 10.3639 |
| 780 | 9.4178 | 9.5212 | 9.6247 | 9.7282 | 9.8317 | 9.9352 | 10.0387 | 10.1422 | 10.2457 | 10.3492 |
| 790 | 9.4042 | 9.5075 | 9.6109 | 9.7142 | 9.8175 | 9.9209 | 10.0242 | 10.1276 | 10.2309 | 10.3342 |
| 800 | 9.3904 | 9.4936 | 9.5968 | 9.7000 | 9.8032 | 9.9063 | 10.0095 | 10.1127 | 10.2159 | 10.3191 |
| 810 | 9.3764 | 9.4795 | 9.5825 | 9.6856 | 9.7886 | 9.8916 | 9.9947 | 10.0977 | 10.2007 | 10.3038 |
| 820 | 9.3623 | 9.4652 | 9.5681 | 9.6710 | 9.7739 | 9.8767 | 9.9796 | 10.0825 | 10.1854 | 10.2883 |
| 830 | 9.3481 | 9.4508 | 9.5535 | 9.6562 | 9.7590 | 9.8617 | 9.9644 | 10.0671 | 10.1699 | 10.2726 |
| 840 | 9.3336 | 9.4362 | 9.5388 | 9.6413 | 9.7439 | 9.8465 | 9.9491 | 10.0516 | 10.1542 | 10.2568 |
| 850 | 9.3191 | 9.4215 | 9.5239 | 9.6263 | 9.7287 | 9.8311 | 9.9335 | 10.0359 | 10.1384 | 10.2408 |
| 860 | 9.3044 | 9.4067 | 9.5089 | 9.6112 | 9.7134 | 9.8157 | 9.9179 | 10.0201 | 10.1224 | 10.2246 |
| 870 | 9.2896 | 9.3917 | 9.4938 | 9.5959 | 9.6980 | 9.8000 | 9.9021 | 10.0042 | 10.1063 | 10.2084 |
| 880 | 9.2747 | 9.3766 | 9.4786 | 9.5805 | 9.6824 | 9.7843 | 9.8862 | 9.9882 | 10.0901 | 10.1920 |
| 890 | 9.2597 | 9.3615 | 9.4632 | 9.5650 | 9.6667 | 9.7685 | 9.8702 | 9.9720 | 10.0737 | 10.1755 |
| 900 | 9.2446 | 9.3462 | 9.4478 | 9.5494 | 9.6509 | 9.7525 | 9.8541 | 9.9557 | 10.0573 | 10.1589 |
| 910 | 9.2294 | 9.3308 | 9.4322 | 9.5336 | 9.6351 | 9.7365 | 9.8379 | 9.9393 | 10.0408 | 10.1422 |
| 920 | 9.2141 | 9.3153 | 9.4166 | 9.5179 | 9.6191 | 9.7204 | 9.8216 | 9.9229 | 10.0241 | 10.1254 |
| 930 | 9.1987 | 9.2998 | 9.4009 | 9.5020 | 9.6031 | 9.7041 | 9.8052 | 9.9063 | 10.0074 | 10.1085 |
| 940 | 9.1833 | 9.2842 | 9.3851 | 9.4860 | 9.5869 | 9.6879 | 9.7888 | 9.8897 | 9.9906 | 10.0915 |
| 950 | 9.1678 | 9.2685 | 9.3693 | 9.4700 | 9.5707 | 9.6715 | 9.7722 | 9.8730 | 9.9737 | 10.0745 |
| 960 | 9.1522 | 9.2528 | 9.3533 | 9.4539 | 9.5545 | 9.6551 | 9.7556 | 9.8562 | 9.9568 | 10.0573 |
| 970 | 9.1366 | 9.2370 | 9.3374 | 9.4378 | 9.5382 | 9.6386 | 9.7390 | 9.8394 | 9.9398 | 10.0402 |
| 980 | 9.1209 | 9.2211 | 9.3213 | 9.4216 | 9.5218 | 9.6220 | 9.7222 | 9.8225 | 9.9227 | 10.0229 |
| 990 | 9.1051 | 9.2052 | 9.3052 | 9.4053 | 9.5054 | 9.6054 | 9.7055 | 9.8055 | 9.9056 | 10.0056 |
| 1000 | 9.0893 | 9.1892 | 9.2891 | 9.3890 | 9.4889 | 9.5888 | 9.6886 | 9.7885 | 9.8884 | 9.9883 |

TABLE 2. Compton energy absorption cross sections (b/atom) in the energy region 1–100 MeV

| E(MeV) | H | He | Li | Be | B | C | N | O | F | Ne | Na | Mg | Al | Si | P |
|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 1 | 0.0999 | 0.1998 | 0.2996 | 0.3995 | 0.4994 | 0.5993 | 0.6992 | 0.7991 | 0.8989 | 0.9988 | 1.0987 | 1.1986 | 1.2985 | 1.3984 | 1.4982 |
| 2 | 0.0835 | 0.1670 | 0.2505 | 0.3340 | 0.4175 | 0.5010 | 0.5845 | 0.6680 | 0.7515 | 0.8350 | 0.9185 | 1.0020 | 1.0855 | 1.1690 | 1.2524 |
| 3 | 0.0714 | 0.1428 | 0.2142 | 0.2856 | 0.3570 | 0.4284 | 0.4999 | 0.5713 | 0.6427 | 0.7141 | 0.7855 | 0.8569 | 0.9283 | 0.9997 | 1.0711 |
| 4 | 0.0626 | 0.1252 | 0.1878 | 0.2504 | 0.3130 | 0.3756 | 0.4382 | 0.5008 | 0.5634 | 0.6260 | 0.6886 | 0.7512 | 0.8138 | 0.8764 | 0.9390 |
| 5 | 0.0559 | 0.1119 | 0.1678 | 0.2237 | 0.2796 | 0.3356 | 0.3915 | 0.4474 | 0.5033 | 0.5593 | 0.6152 | 0.6711 | 0.7270 | 0.7830 | 0.8389 |
| 6 | 0.0507 | 0.1014 | 0.1520 | 0.2027 | 0.2534 | 0.3041 | 0.3548 | 0.4055 | 0.4561 | 0.5068 | 0.5575 | 0.6082 | 0.6589 | 0.7096 | 0.7602 |
| 7 | 0.0464 | 0.0929 | 0.1393 | 0.1858 | 0.2322 | 0.2787 | 0.3251 | 0.3716 | 0.4180 | 0.4644 | 0.5109 | 0.5573 | 0.6038 | 0.6502 | 0.6967 |
| 8 | 0.0429 | 0.0859 | 0.1288 | 0.1718 | 0.2147 | 0.2576 | 0.3006 | 0.3435 | 0.3865 | 0.4294 | 0.4723 | 0.5153 | 0.5582 | 0.6011 | 0.6441 |
| 9 | 0.0400 | 0.0800 | 0.1200 | 0.1599 | 0.1999 | 0.2399 | 0.2799 | 0.3199 | 0.3599 | 0.3998 | 0.4398 | 0.4798 | 0.5198 | 0.5598 | 0.5998 |
| 10 | 0.0375 | 0.0749 | 0.1124 | 0.1498 | 0.1873 | 0.2247 | 0.2622 | 0.2997 | 0.3371 | 0.3746 | 0.4120 | 0.4495 | 0.4869 | 0.5244 | 0.5619 |
| 11 | 0.0353 | 0.0705 | 0.1058 | 0.1411 | 0.1763 | 0.2116 | 0.2469 | 0.2821 | 0.3174 | 0.3527 | 0.3879 | 0.4232 | 0.4585 | 0.4937 | 0.5290 |
| 12 | 0.0333 | 0.0667 | 0.1000 | 0.1334 | 0.1667 | 0.2001 | 0.2334 | 0.2668 | 0.3001 | 0.3335 | 0.3668 | 0.4002 | 0.4335 | 0.4669 | 0.5002 |
| 13 | 0.0316 | 0.0633 | 0.0949 | 0.1266 | 0.1582 | 0.1899 | 0.2215 | 0.2532 | 0.2848 | 0.3165 | 0.3481 | 0.3798 | 0.4114 | 0.4431 | 0.4747 |
| 14 | 0.0301 | 0.0603 | 0.0904 | 0.1205 | 0.1507 | 0.1808 | 0.2110 | 0.2411 | 0.2712 | 0.3014 | 0.3315 | 0.3616 | 0.3918 | 0.4219 | 0.4520 |
| 15 | 0.0288 | 0.0576 | 0.0863 | 0.1151 | 0.1439 | 0.1727 | 0.2014 | 0.2302 | 0.2590 | 0.2878 | 0.3165 | 0.3453 | 0.3741 | 0.4029 | 0.4317 |
| 16 | 0.0275 | 0.0551 | 0.0826 | 0.1102 | 0.1377 | 0.1653 | 0.1928 | 0.2204 | 0.2479 | 0.2755 | 0.3030 | 0.3306 | 0.3581 | 0.3857 | 0.4132 |
| 17 | 0.0264 | 0.0529 | 0.0793 | 0.1057 | 0.1322 | 0.1586 | 0.1850 | 0.2115 | 0.2379 | 0.2643 | 0.2908 | 0.3172 | 0.3436 | 0.3701 | 0.3965 |
| 18 | 0.0254 | 0.0508 | 0.0762 | 0.1017 | 0.1271 | 0.1525 | 0.1779 | 0.2033 | 0.2287 | 0.2542 | 0.2796 | 0.3050 | 0.3304 | 0.3558 | 0.3812 |
| 19 | 0.0245 | 0.0490 | 0.0734 | 0.0979 | 0.1224 | 0.1469 | 0.1714 | 0.1958 | 0.2203 | 0.2448 | 0.2693 | 0.2938 | 0.3182 | 0.3427 | 0.3672 |
| 20 | 0.0236 | 0.0472 | 0.0709 | 0.0945 | 0.1181 | 0.1417 | 0.1653 | 0.1890 | 0.2126 | 0.2362 | 0.2598 | 0.2834 | 0.3071 | 0.3307 | 0.3543 |
| 21 | 0.0228 | 0.0456 | 0.0685 | 0.0913 | 0.1141 | 0.1369 | 0.1598 | 0.1826 | 0.2054 | 0.2282 | 0.2511 | 0.2739 | 0.2967 | 0.3195 | 0.3424 |
| 22 | 0.0221 | 0.0442 | 0.0663 | 0.0883 | 0.1104 | 0.1325 | 0.1546 | 0.1767 | 0.1988 | 0.2209 | 0.2430 | 0.2650 | 0.2871 | 0.3092 | 0.3313 |
| 23 | 0.0214 | 0.0428 | 0.0642 | 0.0856 | 0.1070 | 0.1284 | 0.1498 | 0.1712 | 0.1926 | 0.2140 | 0.2354 | 0.2568 | 0.2782 | 0.2996 | 0.3210 |
| 24 | 0.0208 | 0.0415 | 0.0623 | 0.0830 | 0.1038 | 0.1246 | 0.1453 | 0.1661 | 0.1868 | 0.2076 | 0.2284 | 0.2491 | 0.2699 | 0.2907 | 0.3114 |
| 25 | 0.0202 | 0.0403 | 0.0605 | 0.0806 | 0.1008 | 0.1210 | 0.1411 | 0.1613 | 0.1815 | 0.2016 | 0.2218 | 0.2419 | 0.2621 | 0.2823 | 0.3024 |
| 26 | 0.0196 | 0.0392 | 0.0588 | 0.0784 | 0.0980 | 0.1176 | 0.1372 | 0.1568 | 0.1764 | 0.1960 | 0.2156 | 0.2352 | 0.2548 | 0.2744 | 0.2940 |
| 27 | 0.0191 | 0.0381 | 0.0572 | 0.0763 | 0.0954 | 0.1144 | 0.1335 | 0.1526 | 0.1717 | 0.1907 | 0.2098 | 0.2289 | 0.2479 | 0.2670 | 0.2861 |
| 28 | 0.0186 | 0.0372 | 0.0557 | 0.0743 | 0.0929 | 0.1115 | 0.1300 | 0.1486 | 0.1672 | 0.1858 | 0.2043 | 0.2229 | 0.2415 | 0.2601 | 0.2786 |
| 29 | 0.0181 | 0.0362 | 0.0543 | 0.0724 | 0.0905 | 0.1086 | 0.1267 | 0.1449 | 0.1630 | 0.1811 | 0.1992 | 0.2173 | 0.2354 | 0.2535 | 0.2716 |
| 30 | 0.0177 | 0.0353 | 0.0530 | 0.0707 | 0.0883 | 0.1060 | 0.1236 | 0.1413 | 0.1590 | 0.1766 | 0.1943 | 0.2120 | 0.2296 | 0.2473 | 0.2649 |
| 31 | 0.0172 | 0.0345 | 0.0517 | 0.0690 | 0.0862 | 0.1035 | 0.1207 | 0.1379 | 0.1552 | 0.1724 | 0.1897 | 0.2069 | 0.2242 | 0.2414 | 0.2586 |
| 32 | 0.0168 | 0.0337 | 0.0505 | 0.0674 | 0.0842 | 0.1011 | 0.1179 | 0.1348 | 0.1516 | 0.1684 | 0.1853 | 0.2021 | 0.2190 | 0.2358 | 0.2527 |
| 33 | 0.0165 | 0.0329 | 0.0494 | 0.0659 | 0.0823 | 0.0988 | 0.1153 | 0.1317 | 0.1482 | 0.1647 | 0.1811 | 0.1976 | 0.2141 | 0.2305 | 0.2470 |
| 34 | 0.0161 | 0.0322 | 0.0483 | 0.0644 | 0.0805 | 0.0966 | 0.1127 | 0.1289 | 0.1450 | 0.1611 | 0.1772 | 0.1933 | 0.2094 | 0.2255 | 0.2416 |
| 35 | 0.0158 | 0.0315 | 0.0473 | 0.0631 | 0.0788 | 0.0946 | 0.1103 | 0.1261 | 0.1419 | 0.1576 | 0.1734 | 0.1892 | 0.2049 | 0.2207 | 0.2364 |
| 36 | 0.0154 | 0.0309 | 0.0463 | 0.0617 | 0.0772 | 0.0926 | 0.1081 | 0.1235 | 0.1389 | 0.1544 | 0.1698 | 0.1852 | 0.2007 | 0.2161 | 0.2315 |
| 37 | 0.0151 | 0.0302 | 0.0454 | 0.0605 | 0.0756 | 0.0907 | 0.1059 | 0.1210 | 0.1361 | 0.1512 | 0.1664 | 0.1815 | 0.1966 | 0.2117 | 0.2269 |
| 38 | 0.0148 | 0.0296 | 0.0445 | 0.0593 | 0.0741 | 0.0889 | 0.1038 | 0.1186 | 0.1334 | 0.1482 | 0.1631 | 0.1779 | 0.1927 | 0.2075 | 0.2224 |
| 39 | 0.0145 | 0.0291 | 0.0436 | 0.0582 | 0.0727 | 0.0872 | 0.1018 | 0.1163 | 0.1309 | 0.1454 | 0.1599 | 0.1745 | 0.1890 | 0.2035 | 0.2181 |
| 40 | 0.0143 | 0.0285 | 0.0428 | 0.0571 | 0.0713 | 0.0856 | 0.0999 | 0.1141 | 0.1284 | 0.1427 | 0.1569 | 0.1712 | 0.1854 | 0.1997 | 0.2140 |
| 41 | 0.0140 | 0.0280 | 0.0420 | 0.0560 | 0.0700 | 0.0840 | 0.0980 | 0.1120 | 0.1260 | 0.1400 | 0.1540 | 0.1680 | 0.1820 | 0.1960 | 0.2100 |
| 42 | 0.0137 | 0.0275 | 0.0412 | 0.0550 | 0.0687 | 0.0825 | 0.0962 | 0.1100 | 0.1237 | 0.1375 | 0.1512 | 0.1650 | 0.1787 | 0.1925 | 0.2062 |
| 43 | 0.0135 | 0.0270 | 0.0405 | 0.0540 | 0.0675 | 0.0810 | 0.0946 | 0.1081 | 0.1216 | 0.1351 | 0.1486 | 0.1621 | 0.1756 | 0.1891 | 0.2026 |
| 44 | 0.0133 | 0.0265 | 0.0398 | 0.0531 | 0.0664 | 0.0796 | 0.0929 | 0.1062 | 0.1195 | 0.1327 | 0.1460 | 0.1593 | 0.1726 | 0.1858 | 0.1991 |
| 45 | 0.0130 | 0.0261 | 0.0391 | 0.0522 | 0.0652 | 0.0783 | 0.0913 | 0.1044 | 0.1174 | 0.1305 | 0.1435 | 0.1566 | 0.1696 | 0.1827 | 0.1957 |
| 46 | 0.0128 | 0.0257 | 0.0385 | 0.0513 | 0.0642 | 0.0770 | 0.0898 | 0.1027 | 0.1155 | 0.1283 | 0.1412 | 0.1540 | 0.1668 | 0.1797 | 0.1925 |
| 47 | 0.0126 | 0.0253 | 0.0379 | 0.0505 | 0.0631 | 0.0758 | 0.0884 | 0.1010 | 0.1136 | 0.1263 | 0.1389 | 0.1515 | 0.1641 | 0.1768 | 0.1894 |
| 48 | 0.0124 | 0.0248 | 0.0373 | 0.0497 | 0.0621 | 0.0745 | 0.0870 | 0.0994 | 0.1118 | 0.1242 | 0.1367 | 0.1491 | 0.1615 | 0.1739 | 0.1864 |
| 49 | 0.0122 | 0.0245 | 0.0367 | 0.0489 | 0.0611 | 0.0734 | 0.0856 | 0.0978 | 0.1101 | 0.1223 | 0.1345 | 0.1468 | 0.1590 | 0.1712 | 0.1834 |
| 50 | 0.0120 | 0.0241 | 0.0361 | 0.0482 | 0.0602 | 0.0723 | 0.0843 | 0.0963 | 0.1084 | 0.1204 | 0.1325 | 0.1445 | 0.1565 | 0.1686 | 0.1806 |
| 51 | 0.0119 | 0.0237 | 0.0356 | 0.0474 | 0.0593 | 0.0712 | 0.0830 | 0.0949 | 0.1067 | 0.1186 | 0.1305 | 0.1423 | 0.1542 | 0.1661 | 0.1779 |
| 52 | 0.0117 | 0.0234 | 0.0351 | 0.0467 | 0.0584 | 0.0701 | 0.0818 | 0.0935 | 0.1052 | 0.1169 | 0.1285 | 0.1402 | 0.1519 | 0.1636 | 0.1753 |
| 53 | 0.0115 | 0.0230 | 0.0345 | 0.0461 | 0.0576 | 0.0691 | 0.0806 | 0.0921 | 0.1036 | 0.1152 | 0.1267 | 0.1382 | 0.1497 | 0.1612 | 0.1727 |
| 54 | 0.0114 | 0.0227 | 0.0341 | 0.0454 | 0.0568 | 0.0681 | 0.0795 | 0.0908 | 0.1022 | 0.1135 | 0.1249 | 0.1362 | 0.1476 | 0.1589 | 0.1703 |
| 55 | 0.0112 | 0.0224 | 0.0336 | 0.0448 | 0.0560 | 0.0671 | 0.0783 | 0.0895 | 0.1007 | 0.1119 | 0.1231 | 0.1343 | 0.1455 | 0.1567 | 0.1679 |
| 56 | 0.0110 | 0.0221 | 0.0331 | 0.0441 | 0.0552 | 0.0662 | 0.0773 | 0.0883 | 0.0993 | 0.1104 | 0.1214 | 0.1324 | 0.1435 | 0.1545 | 0.1656 |
| 57 | 0.0109 | 0.0218 | 0.0327 | 0.0435 | 0.0544 | 0.0653 | 0.0762 | 0.0871 | 0.0980 | 0.1089 | 0.1198 | 0.1306 | 0.1415 | 0.1524 | 0.1633 |
| 58 | 0.0107 | 0.0215 | 0.0322 | 0.0430 | 0.0537 | 0.0645 | 0.0752 | 0.0859 | 0.0967 | 0.1074 | 0.1182 | 0.1289 | 0.1396 | 0.1504 | 0.1611 |
| 59 | 0.0106 | 0.0212 | 0.0318 | 0.0424 | 0.0530 | 0.0636 | 0.0742 | 0.0848 | 0.0954 | 0.1060 | 0.1166 | 0.1272 | 0.1378 | 0.1484 | 0.1590 |
| 60 | 0.0105 | 0.0209 | 0.0314 | 0.0419 | 0.0523 | 0.0628 | 0.0732 | 0.0837 | 0.0942 | 0.1046 | 0.1151 | 0.1256 | 0.1360 | 0.1465 | 0.1569 |
| 61 | 0.0103 | 0.0207 | 0.0310 | 0.0413 | 0.0516 | 0.0620 | 0.0723 | 0.0826 | 0.0930 | 0.1033 | 0.1136 | 0.1240 | 0.1343 | 0.1446 | 0.1549 |
| 62 | 0.0102 | 0.0204 | 0.0306 | 0.0408 | 0.0510 | 0.0612 | 0.0714 | 0.0816 | 0.0918 | 0.1020 | 0.1122 | 0.1224 | 0.1326 | 0.1428 | 0.1530 |
| 63 | 0.0101 | 0.0201 | 0.0302 | 0.0403 | 0.0504 | 0.0604 | 0.0705 | 0.0806 | 0.0907 | 0.1007 | 0.1108 | 0.1209 | 0.1310 | 0.1410 | 0.1511 |
| 64 | 0.0100 | 0.0199 | 0.0299 | 0.0398 | 0.0498 | 0.0597 | 0.0697 | 0.0796 | 0.0896 | 0.0995 | 0.1095 | 0.1194 | 0.1294 | 0.1393 | 0.1493 |
| 65 | 0.0098 | 0.0197 | 0.0295 | 0.0393 | 0.0492 | 0.0590 | 0.0688 | 0.0787 | 0.0885 | 0.0983 | 0.1081 | 0.1180 | 0.1278 | 0.1376 | 0.1475 |

TABLE 2. Compton energy absorption cross sections (b/atom) in the energy region 1–100 MeV—Continued

| <i>E</i> (MeV) | H | He | Li | Be | B | C | N | O | F | Ne | Na | Mg | Al | Si | P |
|----------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 66 | 0.0097 | 0.0194 | 0.0291 | 0.0389 | 0.0486 | 0.0583 | 0.0680 | 0.0777 | 0.0874 | 0.0972 | 0.1069 | 0.1166 | 0.1263 | 0.1360 | 0.1457 |
| 67 | 0.0096 | 0.0192 | 0.0288 | 0.0384 | 0.0480 | 0.0576 | 0.0672 | 0.0768 | 0.0864 | 0.0960 | 0.1056 | 0.1152 | 0.1248 | 0.1344 | 0.1440 |
| 68 | 0.0095 | 0.0190 | 0.0285 | 0.0380 | 0.0475 | 0.0569 | 0.0664 | 0.0759 | 0.0854 | 0.0949 | 0.1044 | 0.1139 | 0.1234 | 0.1329 | 0.1424 |
| 69 | 0.0094 | 0.0188 | 0.0281 | 0.0375 | 0.0469 | 0.0563 | 0.0657 | 0.0751 | 0.0844 | 0.0938 | 0.1032 | 0.1126 | 0.1220 | 0.1314 | 0.1407 |
| 70 | 0.0093 | 0.0186 | 0.0278 | 0.0371 | 0.0464 | 0.0557 | 0.0649 | 0.0742 | 0.0835 | 0.0928 | 0.1021 | 0.1113 | 0.1206 | 0.1299 | 0.1392 |
| 71 | 0.0092 | 0.0184 | 0.0275 | 0.0367 | 0.0459 | 0.0551 | 0.0642 | 0.0734 | 0.0826 | 0.0918 | 0.1009 | 0.1101 | 0.1193 | 0.1285 | 0.1376 |
| 72 | 0.0091 | 0.0182 | 0.0272 | 0.0363 | 0.0454 | 0.0545 | 0.0635 | 0.0726 | 0.0817 | 0.0908 | 0.0998 | 0.1089 | 0.1180 | 0.1271 | 0.1361 |
| 73 | 0.0090 | 0.0180 | 0.0269 | 0.0359 | 0.0449 | 0.0539 | 0.0628 | 0.0718 | 0.0808 | 0.0898 | 0.0988 | 0.1077 | 0.1167 | 0.1257 | 0.1347 |
| 74 | 0.0089 | 0.0178 | 0.0266 | 0.0355 | 0.0444 | 0.0533 | 0.0622 | 0.0711 | 0.0799 | 0.0888 | 0.0977 | 0.1066 | 0.1155 | 0.1243 | 0.1332 |
| 75 | 0.0088 | 0.0176 | 0.0264 | 0.0352 | 0.0439 | 0.0527 | 0.0615 | 0.0703 | 0.0791 | 0.0879 | 0.0967 | 0.1055 | 0.1143 | 0.1230 | 0.1318 |
| 76 | 0.0087 | 0.0174 | 0.0261 | 0.0348 | 0.0435 | 0.0522 | 0.0609 | 0.0696 | 0.0783 | 0.0870 | 0.0957 | 0.1044 | 0.1131 | 0.1218 | 0.1305 |
| 77 | 0.0086 | 0.0172 | 0.0258 | 0.0344 | 0.0430 | 0.0516 | 0.0603 | 0.0689 | 0.0775 | 0.0861 | 0.0947 | 0.1033 | 0.1119 | 0.1205 | 0.1291 |
| 78 | 0.0085 | 0.0170 | 0.0256 | 0.0341 | 0.0426 | 0.0511 | 0.0596 | 0.0682 | 0.0767 | 0.0852 | 0.0937 | 0.1023 | 0.1108 | 0.1193 | 0.1278 |
| 79 | 0.0084 | 0.0169 | 0.0253 | 0.0337 | 0.0422 | 0.0506 | 0.0591 | 0.0675 | 0.0759 | 0.0844 | 0.0928 | 0.1012 | 0.1097 | 0.1181 | 0.1265 |
| 80 | 0.0084 | 0.0167 | 0.0251 | 0.0334 | 0.0418 | 0.0501 | 0.0585 | 0.0668 | 0.0752 | 0.0835 | 0.0919 | 0.1002 | 0.1086 | 0.1169 | 0.1253 |
| 81 | 0.0083 | 0.0165 | 0.0248 | 0.0331 | 0.0414 | 0.0496 | 0.0579 | 0.0662 | 0.0744 | 0.0827 | 0.0910 | 0.0993 | 0.1075 | 0.1158 | 0.1241 |
| 82 | 0.0082 | 0.0164 | 0.0246 | 0.0328 | 0.0410 | 0.0491 | 0.0573 | 0.0655 | 0.0737 | 0.0819 | 0.0901 | 0.0983 | 0.1065 | 0.1147 | 0.1229 |
| 83 | 0.0081 | 0.0162 | 0.0243 | 0.0325 | 0.0406 | 0.0487 | 0.0568 | 0.0649 | 0.0730 | 0.0811 | 0.0892 | 0.0974 | 0.1055 | 0.1136 | 0.1217 |
| 84 | 0.0080 | 0.0161 | 0.0241 | 0.0321 | 0.0402 | 0.0482 | 0.0563 | 0.0643 | 0.0723 | 0.0804 | 0.0884 | 0.0964 | 0.1045 | 0.1125 | 0.1205 |
| 85 | 0.0080 | 0.0159 | 0.0239 | 0.0318 | 0.0398 | 0.0478 | 0.0557 | 0.0637 | 0.0717 | 0.0796 | 0.0876 | 0.0955 | 0.1035 | 0.1115 | 0.1194 |
| 86 | 0.0079 | 0.0158 | 0.0237 | 0.0316 | 0.0394 | 0.0473 | 0.0552 | 0.0631 | 0.0710 | 0.0789 | 0.0868 | 0.0947 | 0.1025 | 0.1104 | 0.1183 |
| 87 | 0.0078 | 0.0156 | 0.0234 | 0.0313 | 0.0391 | 0.0469 | 0.0547 | 0.0625 | 0.0703 | 0.0782 | 0.0860 | 0.0938 | 0.1016 | 0.1094 | 0.1172 |
| 88 | 0.0077 | 0.0155 | 0.0232 | 0.0310 | 0.0387 | 0.0465 | 0.0542 | 0.0620 | 0.0697 | 0.0775 | 0.0852 | 0.0929 | 0.1007 | 0.1084 | 0.1162 |
| 89 | 0.0077 | 0.0154 | 0.0230 | 0.0307 | 0.0384 | 0.0461 | 0.0537 | 0.0614 | 0.0691 | 0.0768 | 0.0844 | 0.0921 | 0.0998 | 0.1075 | 0.1151 |
| 90 | 0.0076 | 0.0152 | 0.0228 | 0.0304 | 0.0380 | 0.0456 | 0.0533 | 0.0609 | 0.0685 | 0.0761 | 0.0837 | 0.0913 | 0.0989 | 0.1065 | 0.1141 |
| 91 | 0.0075 | 0.0151 | 0.0226 | 0.0302 | 0.0377 | 0.0452 | 0.0528 | 0.0603 | 0.0679 | 0.0754 | 0.0830 | 0.0905 | 0.0980 | 0.1056 | 0.1131 |
| 92 | 0.0075 | 0.0150 | 0.0224 | 0.0299 | 0.0374 | 0.0449 | 0.0523 | 0.0598 | 0.0673 | 0.0748 | 0.0822 | 0.0897 | 0.0972 | 0.1047 | 0.1121 |
| 93 | 0.0074 | 0.0148 | 0.0222 | 0.0296 | 0.0371 | 0.0445 | 0.0519 | 0.0593 | 0.0667 | 0.0741 | 0.0815 | 0.0889 | 0.0964 | 0.1038 | 0.1112 |
| 94 | 0.0073 | 0.0147 | 0.0220 | 0.0294 | 0.0367 | 0.0441 | 0.0514 | 0.0588 | 0.0661 | 0.0735 | 0.0808 | 0.0882 | 0.0955 | 0.1029 | 0.1102 |
| 95 | 0.0073 | 0.0146 | 0.0219 | 0.0291 | 0.0364 | 0.0437 | 0.0510 | 0.0583 | 0.0656 | 0.0729 | 0.0802 | 0.0874 | 0.0947 | 0.1020 | 0.1093 |
| 96 | 0.0072 | 0.0145 | 0.0217 | 0.0289 | 0.0361 | 0.0434 | 0.0506 | 0.0578 | 0.0650 | 0.0723 | 0.0795 | 0.0867 | 0.0939 | 0.1012 | 0.1084 |
| 97 | 0.0072 | 0.0143 | 0.0215 | 0.0287 | 0.0358 | 0.0430 | 0.0502 | 0.0573 | 0.0645 | 0.0717 | 0.0788 | 0.0860 | 0.0932 | 0.1003 | 0.1075 |
| 98 | 0.0071 | 0.0142 | 0.0213 | 0.0284 | 0.0355 | 0.0427 | 0.0498 | 0.0569 | 0.0640 | 0.0711 | 0.0782 | 0.0853 | 0.0924 | 0.0995 | 0.1066 |
| 99 | 0.0071 | 0.0141 | 0.0212 | 0.0282 | 0.0353 | 0.0423 | 0.0494 | 0.0564 | 0.0635 | 0.0705 | 0.0776 | 0.0846 | 0.0917 | 0.0987 | 0.1058 |
| 100 | 0.0070 | 0.0140 | 0.0210 | 0.0280 | 0.0350 | 0.0420 | 0.0490 | 0.0560 | 0.0630 | 0.0699 | 0.0769 | 0.0839 | 0.0909 | 0.0979 | 0.1049 |
| <i>E</i> (MeV) | S | Cl | A | K | Ca | Sc | Ti | V | Cr | Mn | Fe | Co | Ni | Cu | Zn |
| 1 | 1.5981 | 1.6980 | 1.7979 | 1.8978 | 1.9977 | 2.0975 | 2.1974 | 2.2973 | 2.3972 | 2.4971 | 2.5970 | 2.6968 | 2.7967 | 2.8966 | 2.9965 |
| 2 | 1.3359 | 1.4194 | 1.5029 | 1.5864 | 1.6699 | 1.7534 | 1.8369 | 1.9204 | 2.0039 | 2.0874 | 2.1709 | 2.2544 | 2.3379 | 2.4214 | 2.5049 |
| 3 | 1.1425 | 1.2139 | 1.2853 | 1.3568 | 1.4282 | 1.4996 | 1.5710 | 1.6424 | 1.7138 | 1.7852 | 1.8566 | 1.9280 | 1.9994 | 2.0708 | 2.1422 |
| 4 | 1.0016 | 1.0642 | 1.1268 | 1.1894 | 1.2520 | 1.3146 | 1.3772 | 1.4398 | 1.5024 | 1.5650 | 1.6276 | 1.6902 | 1.7528 | 1.8154 | 1.8780 |
| 5 | 0.8948 | 0.9507 | 1.0067 | 1.0626 | 1.1185 | 1.1744 | 1.2304 | 1.2863 | 1.3422 | 1.3982 | 1.4541 | 1.5100 | 1.5659 | 1.6219 | 1.6778 |
| 6 | 0.8109 | 0.8616 | 0.9123 | 0.9630 | 1.0137 | 1.0643 | 1.1150 | 1.1657 | 1.2164 | 1.2671 | 1.3178 | 1.3684 | 1.4191 | 1.4698 | 1.5205 |
| 7 | 0.7431 | 0.7896 | 0.8360 | 0.8824 | 0.9289 | 0.9753 | 1.0218 | 1.0682 | 1.1147 | 1.1611 | 1.2076 | 1.2540 | 1.3004 | 1.3469 | 1.3933 |
| 8 | 0.6870 | 0.7300 | 0.7729 | 0.8158 | 0.8588 | 0.9017 | 0.9447 | 0.9876 | 1.0305 | 1.0735 | 1.1164 | 1.1594 | 1.2023 | 1.2452 | 1.2882 |
| 9 | 0.6398 | 0.6797 | 0.7197 | 0.7597 | 0.7997 | 0.8397 | 0.8797 | 0.9197 | 0.9596 | 0.9996 | 1.0396 | 1.0796 | 1.1196 | 1.1596 | 1.1995 |
| 10 | 0.5993 | 0.6368 | 0.6742 | 0.7117 | 0.7491 | 0.7866 | 0.8241 | 0.8615 | 0.8990 | 0.9364 | 0.9739 | 1.0113 | 1.0488 | 1.0863 | 1.1237 |
| 11 | 0.5643 | 0.5995 | 0.6348 | 0.6701 | 0.7053 | 0.7406 | 0.7759 | 0.8111 | 0.8464 | 0.8817 | 0.9169 | 0.9522 | 0.9875 | 1.0227 | 1.0580 |
| 12 | 0.5336 | 0.5669 | 0.6002 | 0.6336 | 0.6669 | 0.7003 | 0.7336 | 0.7670 | 0.8003 | 0.8337 | 0.8670 | 0.9004 | 0.9337 | 0.9671 | 1.0004 |
| 13 | 0.5064 | 0.5380 | 0.5697 | 0.6013 | 0.6330 | 0.6646 | 0.6963 | 0.7279 | 0.7596 | 0.7912 | 0.8229 | 0.8545 | 0.8862 | 0.9178 | 0.9495 |
| 14 | 0.4822 | 0.5123 | 0.5425 | 0.5726 | 0.6027 | 0.6329 | 0.6630 | 0.6931 | 0.7233 | 0.7534 | 0.7835 | 0.8137 | 0.8438 | 0.8739 | 0.9041 |
| 15 | 0.4604 | 0.4892 | 0.5180 | 0.5468 | 0.5755 | 0.6043 | 0.6331 | 0.6619 | 0.6907 | 0.7194 | 0.7482 | 0.7770 | 0.8058 | 0.8345 | 0.8633 |
| 16 | 0.4408 | 0.4683 | 0.4959 | 0.5234 | 0.5510 | 0.5785 | 0.6061 | 0.6336 | 0.6612 | 0.6887 | 0.7163 | 0.7438 | 0.7714 | 0.7989 | 0.8265 |
| 17 | 0.4229 | 0.4494 | 0.4758 | 0.5022 | 0.5287 | 0.5551 | 0.5815 | 0.6080 | 0.6344 | 0.6608 | 0.6873 | 0.7137 | 0.7401 | 0.7666 | 0.7930 |
| 18 | 0.4066 | 0.4321 | 0.4575 | 0.4829 | 0.5083 | 0.5337 | 0.5591 | 0.5845 | 0.6100 | 0.6354 | 0.6608 | 0.6862 | 0.7116 | 0.7370 | 0.7625 |
| 19 | 0.3917 | 0.4162 | 0.4407 | 0.4651 | 0.4896 | 0.5141 | 0.5386 | 0.5631 | 0.5875 | 0.6120 | 0.6365 | 0.6610 | 0.6855 | 0.7099 | 0.7344 |
| 20 | 0.3779 | 0.4015 | 0.4252 | 0.4488 | 0.4724 | 0.4960 | 0.5196 | 0.5433 | 0.5669 | 0.5905 | 0.6141 | 0.6377 | 0.6614 | 0.6850 | 0.7086 |
| 21 | 0.3652 | 0.3880 | 0.4108 | 0.4337 | 0.4565 | 0.4793 | 0.5021 | 0.5250 | 0.5478 | 0.5706 | 0.5934 | 0.6163 | 0.6391 | 0.6619 | 0.6847 |
| 22 | 0.3534 | 0.3755 | 0.3976 | 0.4197 | 0.4417 | 0.4638 | 0.4859 | 0.5080 | 0.5301 | 0.5522 | 0.5743 | 0.5964 | 0.6184 | 0.6405 | 0.6626 |
| 23 | 0.3424 | 0.3638 | 0.3852 | 0.4066 | 0.4280 | 0.4494 | 0.4708 | 0.4922 | 0.5136 | 0.5350 | 0.5564 | 0.5778 | 0.5992 | 0.6206 | 0.6420 |
| 24 | 0.3322 | 0.3529 | 0.3737 | 0.3945 | 0.4152 | 0.4360 | 0.4567 | 0.4775 | 0.4983 | 0.5190 | 0.5398 | 0.5605 | 0.5813 | 0.6021 | 0.6228 |
| 25 | 0.3226 | 0.3428 | 0.3629 | 0.3831 | 0.4032 | 0.4234 | 0.4436 | 0.4637 | 0.4839 | 0.5040 | 0.5242 | 0.5444 | 0.5645 | 0.5847 | 0.6049 |
| 26 | 0.3136 | 0.3332 | 0.3528 | 0.3724 | 0.3920 | 0.4116 | 0.4312 | 0.4508 | 0.4704 | 0.4900 | 0.5096 | 0.5292 | 0.5488 | 0.5684 | 0.5880 |
| 27 | 0.3052 | 0.3242 | 0.3433 | 0.3624 | 0.3815 | 0.4005 | 0.4196 | 0.4387 | 0.4577 | 0.4768 | 0.4959 | 0.5150 | 0.5340 | 0.5531 | 0.5722 |
| 28 | 0.2972 | 0.3158 | 0.3344 | 0.3529 | 0.3715 | 0.3901 | 0.4087 | 0.4272 | 0.4458 | 0.4644 | 0.4830 | 0.5015 | 0.5201 | 0.5387 | 0.5573 |

TABLE 2. Compton energy absorption cross sections (b/atom) in the energy region 1–100 MeV—Continued

| E(MeV) | S | Cl | A | K | Ca | Sc | Ti | V | Cr | Mn | Fe | Co | Ni | Cu | Zn |
|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 29 | 0.2897 | 0.3078 | 0.3259 | 0.3440 | 0.3621 | 0.3802 | 0.3983 | 0.4164 | 0.4346 | 0.4527 | 0.4708 | 0.4889 | 0.5070 | 0.5251 | 0.5432 |
| 30 | 0.2826 | 0.3003 | 0.3179 | 0.3356 | 0.3533 | 0.3709 | 0.3886 | 0.4062 | 0.4239 | 0.4416 | 0.4592 | 0.4769 | 0.4946 | 0.5122 | 0.5299 |
| 31 | 0.2759 | 0.2931 | 0.3104 | 0.3276 | 0.3449 | 0.3621 | 0.3793 | 0.3966 | 0.4138 | 0.4311 | 0.4483 | 0.4656 | 0.4828 | 0.5000 | 0.5173 |
| 32 | 0.2695 | 0.2864 | 0.3032 | 0.3200 | 0.3369 | 0.3537 | 0.3706 | 0.3874 | 0.4043 | 0.4211 | 0.4380 | 0.4548 | 0.4717 | 0.4885 | 0.5053 |
| 33 | 0.2635 | 0.2799 | 0.2964 | 0.3129 | 0.3293 | 0.3458 | 0.3623 | 0.3787 | 0.3952 | 0.4117 | 0.4281 | 0.4446 | 0.4611 | 0.4775 | 0.4940 |
| 34 | 0.2577 | 0.2738 | 0.2899 | 0.3060 | 0.3221 | 0.3382 | 0.3543 | 0.3704 | 0.3866 | 0.4027 | 0.4188 | 0.4349 | 0.4510 | 0.4671 | 0.4832 |
| 35 | 0.2522 | 0.2680 | 0.2837 | 0.2995 | 0.3153 | 0.3310 | 0.3468 | 0.3626 | 0.3783 | 0.3941 | 0.4098 | 0.4256 | 0.4414 | 0.4571 | 0.4729 |
| 36 | 0.2470 | 0.2624 | 0.2779 | 0.2933 | 0.3087 | 0.3242 | 0.3396 | 0.3550 | 0.3705 | 0.3859 | 0.4013 | 0.4168 | 0.4322 | 0.4476 | 0.4631 |
| 37 | 0.2420 | 0.2571 | 0.2722 | 0.2874 | 0.3025 | 0.3176 | 0.3327 | 0.3478 | 0.3630 | 0.3781 | 0.3932 | 0.4083 | 0.4235 | 0.4386 | 0.4537 |
| 38 | 0.2372 | 0.2520 | 0.2668 | 0.2817 | 0.2965 | 0.3113 | 0.3261 | 0.3410 | 0.3558 | 0.3706 | 0.3854 | 0.4003 | 0.4151 | 0.4299 | 0.4447 |
| 39 | 0.2326 | 0.2472 | 0.2617 | 0.2762 | 0.2908 | 0.3053 | 0.3199 | 0.3344 | 0.3489 | 0.3635 | 0.3780 | 0.3926 | 0.4071 | 0.4216 | 0.4362 |
| 40 | 0.2282 | 0.2425 | 0.2568 | 0.2710 | 0.2853 | 0.2996 | 0.3138 | 0.3281 | 0.3424 | 0.3566 | 0.3709 | 0.3852 | 0.3994 | 0.4137 | 0.4280 |
| 41 | 0.2240 | 0.2380 | 0.2520 | 0.2660 | 0.2800 | 0.2940 | 0.3080 | 0.3221 | 0.3361 | 0.3501 | 0.3641 | 0.3781 | 0.3921 | 0.4061 | 0.4201 |
| 42 | 0.2200 | 0.2337 | 0.2475 | 0.2612 | 0.2750 | 0.2887 | 0.3025 | 0.3162 | 0.3300 | 0.3437 | 0.3575 | 0.3712 | 0.3850 | 0.3987 | 0.4125 |
| 43 | 0.2161 | 0.2296 | 0.2431 | 0.2566 | 0.2701 | 0.2837 | 0.2972 | 0.3107 | 0.3242 | 0.3377 | 0.3512 | 0.3647 | 0.3782 | 0.3917 | 0.4052 |
| 44 | 0.2124 | 0.2257 | 0.2389 | 0.2522 | 0.2655 | 0.2788 | 0.2920 | 0.3053 | 0.3186 | 0.3319 | 0.3451 | 0.3584 | 0.3717 | 0.3850 | 0.3982 |
| 45 | 0.2088 | 0.2218 | 0.2349 | 0.2479 | 0.2610 | 0.2740 | 0.2871 | 0.3001 | 0.3132 | 0.3262 | 0.3393 | 0.3523 | 0.3654 | 0.3784 | 0.3915 |
| 46 | 0.2053 | 0.2182 | 0.2310 | 0.2438 | 0.2567 | 0.2695 | 0.2823 | 0.2952 | 0.3080 | 0.3208 | 0.3337 | 0.3465 | 0.3593 | 0.3722 | 0.3850 |
| 47 | 0.2020 | 0.2146 | 0.2273 | 0.2399 | 0.2525 | 0.2651 | 0.2778 | 0.2904 | 0.3030 | 0.3156 | 0.3283 | 0.3409 | 0.3535 | 0.3661 | 0.3788 |
| 48 | 0.1988 | 0.2112 | 0.2236 | 0.2361 | 0.2485 | 0.2609 | 0.2733 | 0.2857 | 0.2982 | 0.3106 | 0.3230 | 0.3354 | 0.3479 | 0.3603 | 0.3727 |
| 49 | 0.1957 | 0.2079 | 0.2201 | 0.2324 | 0.2446 | 0.2568 | 0.2691 | 0.2813 | 0.2935 | 0.3057 | 0.3180 | 0.3302 | 0.3424 | 0.3547 | 0.3669 |
| 50 | 0.1927 | 0.2047 | 0.2168 | 0.2288 | 0.2408 | 0.2529 | 0.2649 | 0.2770 | 0.2890 | 0.3011 | 0.3131 | 0.3251 | 0.3372 | 0.3492 | 0.3613 |
| 51 | 0.1898 | 0.2016 | 0.2135 | 0.2254 | 0.2372 | 0.2491 | 0.2609 | 0.2728 | 0.2847 | 0.2965 | 0.3084 | 0.3202 | 0.3321 | 0.3440 | 0.3558 |
| 52 | 0.1870 | 0.1986 | 0.2103 | 0.2220 | 0.2337 | 0.2454 | 0.2571 | 0.2688 | 0.2804 | 0.2921 | 0.3038 | 0.3155 | 0.3272 | 0.3389 | 0.3506 |
| 53 | 0.1842 | 0.1958 | 0.2073 | 0.2188 | 0.2303 | 0.2418 | 0.2533 | 0.2649 | 0.2764 | 0.2879 | 0.2994 | 0.3109 | 0.3224 | 0.3339 | 0.3455 |
| 54 | 0.1816 | 0.1930 | 0.2043 | 0.2157 | 0.2270 | 0.2384 | 0.2497 | 0.2611 | 0.2724 | 0.2838 | 0.2951 | 0.3065 | 0.3178 | 0.3292 | 0.3405 |
| 55 | 0.1791 | 0.1903 | 0.2014 | 0.2126 | 0.2238 | 0.2350 | 0.2462 | 0.2574 | 0.2686 | 0.2798 | 0.2910 | 0.3022 | 0.3134 | 0.3246 | 0.3357 |
| 56 | 0.1766 | 0.1876 | 0.1987 | 0.2097 | 0.2207 | 0.2318 | 0.2428 | 0.2539 | 0.2649 | 0.2759 | 0.2870 | 0.2980 | 0.3090 | 0.3201 | 0.3311 |
| 57 | 0.1742 | 0.1851 | 0.1960 | 0.2069 | 0.2177 | 0.2286 | 0.2395 | 0.2504 | 0.2613 | 0.2722 | 0.2831 | 0.2940 | 0.3048 | 0.3157 | 0.3266 |
| 58 | 0.1719 | 0.1826 | 0.1934 | 0.2041 | 0.2148 | 0.2256 | 0.2363 | 0.2471 | 0.2578 | 0.2685 | 0.2793 | 0.2900 | 0.3008 | 0.3115 | 0.3223 |
| 59 | 0.1696 | 0.1802 | 0.1908 | 0.2014 | 0.2120 | 0.2226 | 0.2332 | 0.2438 | 0.2544 | 0.2650 | 0.2756 | 0.2862 | 0.2968 | 0.3074 | 0.3180 |
| 60 | 0.1674 | 0.1779 | 0.1883 | 0.1988 | 0.2093 | 0.2197 | 0.2302 | 0.2407 | 0.2511 | 0.2616 | 0.2720 | 0.2825 | 0.2930 | 0.3034 | 0.3139 |
| 61 | 0.1653 | 0.1756 | 0.1859 | 0.1963 | 0.2066 | 0.2169 | 0.2273 | 0.2376 | 0.2479 | 0.2582 | 0.2686 | 0.2789 | 0.2892 | 0.2996 | 0.3099 |
| 62 | 0.1632 | 0.1734 | 0.1836 | 0.1938 | 0.2040 | 0.2142 | 0.2244 | 0.2346 | 0.2448 | 0.2550 | 0.2652 | 0.2754 | 0.2856 | 0.2958 | 0.3060 |
| 63 | 0.1612 | 0.1713 | 0.1813 | 0.1914 | 0.2015 | 0.2116 | 0.2216 | 0.2317 | 0.2418 | 0.2518 | 0.2619 | 0.2720 | 0.2821 | 0.2921 | 0.3022 |
| 64 | 0.1592 | 0.1692 | 0.1791 | 0.1891 | 0.1990 | 0.2090 | 0.2189 | 0.2289 | 0.2388 | 0.2488 | 0.2587 | 0.2687 | 0.2786 | 0.2886 | 0.2985 |
| 65 | 0.1573 | 0.1671 | 0.1770 | 0.1868 | 0.1966 | 0.2065 | 0.2163 | 0.2261 | 0.2360 | 0.2458 | 0.2556 | 0.2655 | 0.2753 | 0.2851 | 0.2949 |
| 66 | 0.1554 | 0.1652 | 0.1749 | 0.1846 | 0.1943 | 0.2040 | 0.2137 | 0.2234 | 0.2332 | 0.2429 | 0.2526 | 0.2623 | 0.2720 | 0.2817 | 0.2915 |
| 67 | 0.1536 | 0.1632 | 0.1728 | 0.1824 | 0.1920 | 0.2016 | 0.2112 | 0.2208 | 0.2304 | 0.2400 | 0.2496 | 0.2592 | 0.2688 | 0.2784 | 0.2880 |
| 68 | 0.1519 | 0.1613 | 0.1708 | 0.1803 | 0.1898 | 0.1993 | 0.2088 | 0.2183 | 0.2278 | 0.2373 | 0.2468 | 0.2563 | 0.2657 | 0.2752 | 0.2847 |
| 69 | 0.1501 | 0.1595 | 0.1689 | 0.1783 | 0.1877 | 0.1970 | 0.2064 | 0.2158 | 0.2252 | 0.2346 | 0.2440 | 0.2533 | 0.2627 | 0.2721 | 0.2815 |
| 70 | 0.1484 | 0.1577 | 0.1670 | 0.1763 | 0.1856 | 0.1948 | 0.2041 | 0.2134 | 0.2227 | 0.2320 | 0.2412 | 0.2505 | 0.2598 | 0.2691 | 0.2783 |
| 71 | 0.1468 | 0.1560 | 0.1652 | 0.1743 | 0.1835 | 0.1927 | 0.2019 | 0.2110 | 0.2202 | 0.2294 | 0.2386 | 0.2477 | 0.2569 | 0.2661 | 0.2753 |
| 72 | 0.1452 | 0.1543 | 0.1634 | 0.1724 | 0.1815 | 0.1906 | 0.1997 | 0.2087 | 0.2178 | 0.2269 | 0.2360 | 0.2450 | 0.2541 | 0.2632 | 0.2723 |
| 73 | 0.1436 | 0.1526 | 0.1616 | 0.1706 | 0.1795 | 0.1885 | 0.1975 | 0.2065 | 0.2155 | 0.2244 | 0.2334 | 0.2424 | 0.2514 | 0.2603 | 0.2693 |
| 74 | 0.1421 | 0.1510 | 0.1599 | 0.1688 | 0.1776 | 0.1865 | 0.1954 | 0.2043 | 0.2132 | 0.2220 | 0.2309 | 0.2398 | 0.2487 | 0.2576 | 0.2665 |
| 75 | 0.1406 | 0.1494 | 0.1582 | 0.1670 | 0.1758 | 0.1846 | 0.1934 | 0.2021 | 0.2109 | 0.2197 | 0.2285 | 0.2373 | 0.2461 | 0.2549 | 0.2637 |
| 76 | 0.1392 | 0.1479 | 0.1566 | 0.1653 | 0.1739 | 0.1826 | 0.1913 | 0.2000 | 0.2087 | 0.2174 | 0.2261 | 0.2348 | 0.2435 | 0.2522 | 0.2609 |
| 77 | 0.1377 | 0.1463 | 0.1549 | 0.1636 | 0.1722 | 0.1808 | 0.1894 | 0.1980 | 0.2066 | 0.2152 | 0.2238 | 0.2324 | 0.2410 | 0.2496 | 0.2582 |
| 78 | 0.1363 | 0.1449 | 0.1534 | 0.1619 | 0.1704 | 0.1789 | 0.1875 | 0.1960 | 0.2045 | 0.2130 | 0.2216 | 0.2301 | 0.2386 | 0.2471 | 0.2556 |
| 79 | 0.1350 | 0.1434 | 0.1518 | 0.1603 | 0.1687 | 0.1772 | 0.1856 | 0.1940 | 0.2025 | 0.2109 | 0.2193 | 0.2278 | 0.2362 | 0.2446 | 0.2531 |
| 80 | 0.1336 | 0.1420 | 0.1503 | 0.1587 | 0.1671 | 0.1754 | 0.1838 | 0.1921 | 0.2005 | 0.2088 | 0.2172 | 0.2255 | 0.2339 | 0.2422 | 0.2506 |
| 81 | 0.1323 | 0.1406 | 0.1489 | 0.1571 | 0.1654 | 0.1737 | 0.1820 | 0.1902 | 0.1985 | 0.2068 | 0.2150 | 0.2233 | 0.2316 | 0.2399 | 0.2481 |
| 82 | 0.1311 | 0.1392 | 0.1474 | 0.1556 | 0.1638 | 0.1720 | 0.1802 | 0.1884 | 0.1966 | 0.2048 | 0.2130 | 0.2212 | 0.2293 | 0.2375 | 0.2457 |
| 83 | 0.1298 | 0.1379 | 0.1460 | 0.1541 | 0.1623 | 0.1704 | 0.1785 | 0.1866 | 0.1947 | 0.2028 | 0.2109 | 0.2190 | 0.2272 | 0.2353 | 0.2434 |
| 84 | 0.1286 | 0.1366 | 0.1447 | 0.1527 | 0.1607 | 0.1688 | 0.1768 | 0.1848 | 0.1929 | 0.2009 | 0.2089 | 0.2170 | 0.2250 | 0.2331 | 0.2411 |
| 85 | 0.1274 | 0.1353 | 0.1433 | 0.1513 | 0.1592 | 0.1672 | 0.1751 | 0.1831 | 0.1911 | 0.1990 | 0.2070 | 0.2150 | 0.2229 | 0.2309 | 0.2388 |
| 86 | 0.1262 | 0.1341 | 0.1420 | 0.1499 | 0.1578 | 0.1656 | 0.1735 | 0.1814 | 0.1893 | 0.1972 | 0.2051 | 0.2130 | 0.2209 | 0.2287 | 0.2366 |
| 87 | 0.1251 | 0.1329 | 0.1407 | 0.1485 | 0.1563 | 0.1641 | 0.1719 | 0.1798 | 0.1876 | 0.1954 | 0.2032 | 0.2110 | 0.2188 | 0.2266 | 0.2345 |
| 88 | 0.1239 | 0.1317 | 0.1394 | 0.1472 | 0.1549 | 0.1626 | 0.1704 | 0.1781 | 0.1859 | 0.1936 | 0.2014 | 0.2091 | 0.2169 | 0.2246 | 0.2324 |
| 89 | 0.1228 | 0.1305 | 0.1382 | 0.1458 | 0.1535 | 0.1612 | 0.1689 | 0.1765 | 0.1842 | 0.1919 | 0.1996 | 0.2072 | 0.2149 | 0.2226 | 0.2303 |
| 90 | 0.1217 | 0.1293 | 0.1369 | 0.1445 | 0.1522 | 0.1598 | 0.1674 | 0.1750 | 0.1826 | 0.1902 | 0.1978 | 0.2054 | 0.2130 | 0.2206 | 0.2282 |
| 91 | 0.1207 | 0.1282 | 0.1357 | 0.1433 | 0.1508 | 0.1584 | 0.1659 | 0.1734 | 0.1810 | 0.1885 | 0.1961 | 0.2036 | 0.2112 | 0.2187 | 0.2262 |
| 92 | 0.1196 | 0.1271 | 0.1346 | 0.1420 | 0.1495 | 0.1570 | 0.1645 | 0.1719 | 0.1794 | 0.1869 | 0.1944 | 0.2019 | 0.2093 | 0.2168 | 0.2243 |
| 93 | 0.1186 | 0.1260 | 0.1334 | 0.1408 | 0.1482 | 0.1556 | 0.1631 | 0.1705 | 0.1779 | 0.1853 | 0.1927 | 0.2001 | 0.2075 | 0.2149 | 0.2224 |

TABLE 2. Compton energy absorption cross sections (b/atom) in the energy region 1–100 MeV—Continued

| <i>E</i> (MeV) | S | Cl | A | K | Ca | Sc | Ti | V | Cr | Mn | Fe | Co | Ni | Cu | Zn |
|----------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 94 | 0.1176 | 0.1249 | 0.1323 | 0.1396 | 0.1470 | 0.1543 | 0.1617 | 0.1690 | 0.1764 | 0.1837 | 0.1911 | 0.1984 | 0.2058 | 0.2131 | 0.2205 |
| 95 | 0.1166 | 0.1239 | 0.1312 | 0.1385 | 0.1457 | 0.1530 | 0.1603 | 0.1676 | 0.1749 | 0.1822 | 0.1895 | 0.1968 | 0.2040 | 0.2113 | 0.2186 |
| 96 | 0.1156 | 0.1229 | 0.1301 | 0.1373 | 0.1445 | 0.1518 | 0.1590 | 0.1662 | 0.1734 | 0.1807 | 0.1879 | 0.1951 | 0.2023 | 0.2096 | 0.2168 |
| 97 | 0.1147 | 0.1218 | 0.1290 | 0.1362 | 0.1433 | 0.1505 | 0.1577 | 0.1648 | 0.1720 | 0.1792 | 0.1863 | 0.1935 | 0.2007 | 0.2078 | 0.2150 |
| 98 | 0.1137 | 0.1208 | 0.1280 | 0.1351 | 0.1422 | 0.1493 | 0.1564 | 0.1635 | 0.1706 | 0.1777 | 0.1848 | 0.1919 | 0.1990 | 0.2061 | 0.2133 |
| 99 | 0.1128 | 0.1199 | 0.1269 | 0.1340 | 0.1410 | 0.1481 | 0.1551 | 0.1622 | 0.1692 | 0.1763 | 0.1833 | 0.1904 | 0.1974 | 0.2045 | 0.2115 |
| 100 | 0.1119 | 0.1189 | 0.1259 | 0.1329 | 0.1399 | 0.1469 | 0.1539 | 0.1609 | 0.1679 | 0.1749 | 0.1819 | 0.1889 | 0.1958 | 0.2028 | 0.2098 |
| <i>E</i> (MeV) | Ga | Ge | S | Se | Br | Kr | Rb | Sr | Y | Zr | Nb | Mo | Tc | Ru | Rh |
| 1 | 3.0964 | 3.1963 | 3.2961 | 3.3960 | 3.4959 | 3.5958 | 3.6957 | 3.7956 | 3.8954 | 3.9953 | 4.0952 | 4.1951 | 4.2950 | 4.3949 | 4.4947 |
| 2 | 2.5884 | 2.6719 | 2.7554 | 2.8389 | 2.9224 | 3.0059 | 3.0894 | 3.1729 | 3.2564 | 3.3399 | 3.4234 | 3.5069 | 3.5904 | 3.6739 | 3.7573 |
| 3 | 2.2137 | 2.2851 | 2.3565 | 2.4279 | 2.4993 | 2.5707 | 2.6421 | 2.7135 | 2.7849 | 2.8563 | 2.9277 | 2.9991 | 3.0705 | 3.1420 | 3.2134 |
| 4 | 1.9406 | 2.0032 | 2.0658 | 2.1284 | 2.1910 | 2.2536 | 2.3162 | 2.3788 | 2.4414 | 2.5040 | 2.5666 | 2.6293 | 2.6919 | 2.7545 | 2.8171 |
| 5 | 1.7337 | 1.7896 | 1.8456 | 1.9015 | 1.9574 | 2.0133 | 2.0693 | 2.1252 | 2.1811 | 2.2370 | 2.2930 | 2.3489 | 2.4048 | 2.4607 | 2.5167 |
| 6 | 1.5712 | 1.6219 | 1.6725 | 1.7232 | 1.7739 | 1.8246 | 1.8753 | 1.9260 | 1.9766 | 2.0273 | 2.0780 | 2.1287 | 2.1794 | 2.2301 | 2.2807 |
| 7 | 1.4398 | 1.4862 | 1.5327 | 1.5791 | 1.6256 | 1.6720 | 1.7185 | 1.7649 | 1.8113 | 1.8578 | 1.9042 | 1.9507 | 1.9971 | 2.0436 | 2.0900 |
| 8 | 1.3311 | 1.3740 | 1.4170 | 1.4599 | 1.5029 | 1.5458 | 1.5887 | 1.6317 | 1.6746 | 1.7176 | 1.7605 | 1.8034 | 1.8464 | 1.8893 | 1.9323 |
| 9 | 1.2395 | 1.2795 | 1.3195 | 1.3595 | 1.3995 | 1.4395 | 1.4794 | 1.5194 | 1.5594 | 1.5994 | 1.6394 | 1.6794 | 1.7194 | 1.7593 | 1.7993 |
| 10 | 1.1612 | 1.1986 | 1.2361 | 1.2735 | 1.3110 | 1.3485 | 1.3859 | 1.4234 | 1.4608 | 1.4983 | 1.5358 | 1.5732 | 1.6107 | 1.6481 | 1.6856 |
| 11 | 1.0933 | 1.1285 | 1.1638 | 1.1991 | 1.2343 | 1.2696 | 1.3049 | 1.3401 | 1.3754 | 1.4107 | 1.4459 | 1.4812 | 1.5165 | 1.5517 | 1.5870 |
| 12 | 1.0338 | 1.0671 | 1.1005 | 1.1338 | 1.1672 | 1.2005 | 1.2338 | 1.2672 | 1.3005 | 1.3339 | 1.3672 | 1.4006 | 1.4339 | 1.4673 | 1.5006 |
| 13 | 0.9811 | 1.0128 | 1.0444 | 1.0761 | 1.1077 | 1.1394 | 1.1710 | 1.2027 | 1.2343 | 1.2660 | 1.2976 | 1.3293 | 1.3609 | 1.3926 | 1.4242 |
| 14 | 0.9342 | 0.9644 | 0.9945 | 1.0246 | 1.0548 | 1.0849 | 1.1150 | 1.1452 | 1.1753 | 1.2054 | 1.2356 | 1.2657 | 1.2959 | 1.3260 | 1.3561 |
| 15 | 0.8921 | 0.9209 | 0.9496 | 0.9784 | 1.0072 | 1.0360 | 1.0648 | 1.0935 | 1.1223 | 1.1511 | 1.1799 | 1.2086 | 1.2374 | 1.2662 | 1.2950 |
| 16 | 0.8540 | 0.8816 | 0.9091 | 0.9367 | 0.9642 | 0.9918 | 1.0193 | 1.0469 | 1.0744 | 1.1020 | 1.1295 | 1.1571 | 1.1846 | 1.2122 | 1.2397 |
| 17 | 0.8194 | 0.8459 | 0.8723 | 0.8987 | 0.9252 | 0.9516 | 0.9780 | 1.0045 | 1.0309 | 1.0573 | 1.0838 | 1.1102 | 1.1366 | 1.1631 | 1.1895 |
| 18 | 0.7879 | 0.8133 | 0.8387 | 0.8641 | 0.8895 | 0.9149 | 0.9404 | 0.9658 | 0.9912 | 1.0166 | 1.0420 | 1.0674 | 1.0928 | 1.1183 | 1.1437 |
| 19 | 0.7589 | 0.7834 | 0.8079 | 0.8323 | 0.8568 | 0.8813 | 0.9058 | 0.9303 | 0.9547 | 0.9792 | 1.0037 | 1.0282 | 1.0527 | 1.0772 | 1.1016 |
| 20 | 0.7322 | 0.7558 | 0.7795 | 0.8031 | 0.8267 | 0.8503 | 0.8739 | 0.8976 | 0.9212 | 0.9448 | 0.9684 | 0.9921 | 1.0157 | 1.0393 | 1.0629 |
| 21 | 0.7076 | 0.7304 | 0.7532 | 0.7760 | 0.7989 | 0.8217 | 0.8445 | 0.8673 | 0.8902 | 0.9130 | 0.9358 | 0.9586 | 0.9815 | 1.0043 | 1.0271 |
| 22 | 0.6847 | 0.7068 | 0.7289 | 0.7510 | 0.7731 | 0.7951 | 0.8172 | 0.8393 | 0.8614 | 0.8835 | 0.9056 | 0.9277 | 0.9498 | 0.9718 | 0.9939 |
| 23 | 0.6634 | 0.6848 | 0.7062 | 0.7276 | 0.7490 | 0.7704 | 0.7918 | 0.8132 | 0.8346 | 0.8560 | 0.8774 | 0.8988 | 0.9202 | 0.9416 | 0.9630 |
| 24 | 0.6436 | 0.6643 | 0.6851 | 0.7059 | 0.7266 | 0.7474 | 0.7681 | 0.7889 | 0.8097 | 0.8304 | 0.8512 | 0.8720 | 0.8927 | 0.9135 | 0.9342 |
| 25 | 0.6250 | 0.6452 | 0.6653 | 0.6855 | 0.7057 | 0.7258 | 0.7460 | 0.7662 | 0.7863 | 0.8065 | 0.8266 | 0.8468 | 0.8670 | 0.8871 | 0.9073 |
| 26 | 0.6076 | 0.6272 | 0.6468 | 0.6664 | 0.6860 | 0.7056 | 0.7252 | 0.7448 | 0.7644 | 0.7840 | 0.8036 | 0.8232 | 0.8428 | 0.8624 | 0.8820 |
| 27 | 0.5912 | 0.6103 | 0.6294 | 0.6485 | 0.6675 | 0.6866 | 0.7057 | 0.7248 | 0.7438 | 0.7629 | 0.7820 | 0.8010 | 0.8201 | 0.8392 | 0.8583 |
| 28 | 0.5758 | 0.5944 | 0.6130 | 0.6316 | 0.6501 | 0.6687 | 0.6873 | 0.7059 | 0.7244 | 0.7430 | 0.7616 | 0.7802 | 0.7987 | 0.8173 | 0.8359 |
| 29 | 0.5613 | 0.5794 | 0.5975 | 0.6156 | 0.6337 | 0.6518 | 0.6699 | 0.6880 | 0.7061 | 0.7243 | 0.7424 | 0.7605 | 0.7786 | 0.7967 | 0.8148 |
| 30 | 0.5476 | 0.5652 | 0.5829 | 0.6005 | 0.6182 | 0.6359 | 0.6535 | 0.6712 | 0.6889 | 0.7065 | 0.7242 | 0.7418 | 0.7595 | 0.7772 | 0.7948 |
| 31 | 0.5345 | 0.5518 | 0.5690 | 0.5863 | 0.6035 | 0.6207 | 0.6380 | 0.6552 | 0.6725 | 0.6897 | 0.7070 | 0.7242 | 0.7414 | 0.7587 | 0.7759 |
| 32 | 0.5222 | 0.5390 | 0.5559 | 0.5727 | 0.5896 | 0.6064 | 0.6233 | 0.6401 | 0.6569 | 0.6738 | 0.6906 | 0.7075 | 0.7243 | 0.7412 | 0.7580 |
| 33 | 0.5105 | 0.5269 | 0.5434 | 0.5599 | 0.5763 | 0.5928 | 0.6093 | 0.6257 | 0.6422 | 0.6587 | 0.6751 | 0.6916 | 0.7081 | 0.7245 | 0.7410 |
| 34 | 0.4993 | 0.5154 | 0.5315 | 0.5476 | 0.5637 | 0.5798 | 0.5959 | 0.6120 | 0.6281 | 0.6443 | 0.6604 | 0.6765 | 0.6926 | 0.7087 | 0.7248 |
| 35 | 0.4887 | 0.5044 | 0.5202 | 0.5360 | 0.5517 | 0.5675 | 0.5832 | 0.5990 | 0.6148 | 0.6305 | 0.6463 | 0.6621 | 0.6778 | 0.6936 | 0.7093 |
| 36 | 0.4785 | 0.4940 | 0.5094 | 0.5248 | 0.5403 | 0.5557 | 0.5711 | 0.5866 | 0.6020 | 0.6174 | 0.6329 | 0.6483 | 0.6638 | 0.6792 | 0.6946 |
| 37 | 0.4688 | 0.4840 | 0.4991 | 0.5142 | 0.5293 | 0.5445 | 0.5596 | 0.5747 | 0.5898 | 0.6049 | 0.6201 | 0.6352 | 0.6503 | 0.6654 | 0.6806 |
| 38 | 0.4596 | 0.4744 | 0.4892 | 0.5040 | 0.5189 | 0.5337 | 0.5485 | 0.5633 | 0.5782 | 0.5930 | 0.6078 | 0.6226 | 0.6375 | 0.6523 | 0.6671 |
| 39 | 0.4507 | 0.4652 | 0.4798 | 0.4943 | 0.5089 | 0.5234 | 0.5379 | 0.5525 | 0.5670 | 0.5816 | 0.5961 | 0.6106 | 0.6252 | 0.6397 | 0.6543 |
| 40 | 0.4422 | 0.4565 | 0.4707 | 0.4850 | 0.4993 | 0.5135 | 0.5278 | 0.5421 | 0.5563 | 0.5706 | 0.5849 | 0.5991 | 0.6134 | 0.6277 | 0.6419 |
| 41 | 0.4341 | 0.4481 | 0.4621 | 0.4761 | 0.4901 | 0.5041 | 0.5181 | 0.5321 | 0.5461 | 0.5601 | 0.5741 | 0.5881 | 0.6021 | 0.6161 | 0.6301 |
| 42 | 0.4262 | 0.4400 | 0.4537 | 0.4675 | 0.4812 | 0.4950 | 0.5087 | 0.5225 | 0.5362 | 0.5500 | 0.5637 | 0.5775 | 0.5912 | 0.6050 | 0.6187 |
| 43 | 0.4187 | 0.4322 | 0.4457 | 0.4593 | 0.4728 | 0.4863 | 0.4998 | 0.5133 | 0.5268 | 0.5403 | 0.5538 | 0.5673 | 0.5808 | 0.5943 | 0.6078 |
| 44 | 0.4115 | 0.4248 | 0.4380 | 0.4513 | 0.4646 | 0.4779 | 0.4911 | 0.5044 | 0.5177 | 0.5310 | 0.5442 | 0.5575 | 0.5708 | 0.5841 | 0.5973 |
| 45 | 0.4045 | 0.4176 | 0.4306 | 0.4437 | 0.4567 | 0.4698 | 0.4828 | 0.4959 | 0.5089 | 0.5220 | 0.5350 | 0.5481 | 0.5611 | 0.5742 | 0.5872 |
| 46 | 0.3978 | 0.4107 | 0.4235 | 0.4363 | 0.4492 | 0.4620 | 0.4748 | 0.4877 | 0.5005 | 0.5133 | 0.5262 | 0.5390 | 0.5518 | 0.5647 | 0.5775 |
| 47 | 0.3914 | 0.4040 | 0.4166 | 0.4293 | 0.4419 | 0.4545 | 0.4671 | 0.4798 | 0.4924 | 0.5050 | 0.5176 | 0.5303 | 0.5429 | 0.5555 | 0.5681 |
| 48 | 0.3851 | 0.3976 | 0.4100 | 0.4224 | 0.4348 | 0.4473 | 0.4597 | 0.4721 | 0.4845 | 0.4970 | 0.5094 | 0.5218 | 0.5342 | 0.5467 | 0.5591 |
| 49 | 0.3791 | 0.3914 | 0.4036 | 0.4158 | 0.4280 | 0.4403 | 0.4525 | 0.4647 | 0.4770 | 0.4892 | 0.5014 | 0.5136 | 0.5259 | 0.5381 | 0.5503 |
| 50 | 0.3733 | 0.3853 | 0.3974 | 0.4094 | 0.4215 | 0.4335 | 0.4456 | 0.4576 | 0.4696 | 0.4817 | 0.4937 | 0.5058 | 0.5178 | 0.5299 | 0.5419 |
| 51 | 0.3677 | 0.3795 | 0.3914 | 0.4033 | 0.4151 | 0.4270 | 0.4388 | 0.4507 | 0.4626 | 0.4744 | 0.4863 | 0.4982 | 0.5100 | 0.5219 | 0.5337 |
| 52 | 0.3622 | 0.3739 | 0.3856 | 0.3973 | 0.4090 | 0.4207 | 0.4324 | 0.4440 | 0.4557 | 0.4674 | 0.4791 | 0.4908 | 0.5025 | 0.5142 | 0.5258 |
| 53 | 0.3570 | 0.3685 | 0.3800 | 0.3915 | 0.4030 | 0.4146 | 0.4261 | 0.4376 | 0.4491 | 0.4606 | 0.4721 | 0.4836 | 0.4952 | 0.5067 | 0.5182 |
| 54 | 0.3519 | 0.3632 | 0.3746 | 0.3859 | 0.3973 | 0.4086 | 0.4200 | 0.4313 | 0.4427 | 0.4540 | 0.4654 | 0.4767 | 0.4881 | 0.4994 | 0.5108 |
| 55 | 0.3469 | 0.3581 | 0.3693 | 0.3805 | 0.3917 | 0.4029 | 0.4141 | 0.4253 | 0.4365 | 0.4477 | 0.4589 | 0.4700 | 0.4812 | 0.4924 | 0.5036 |
| 56 | 0.3421 | 0.3532 | 0.3642 | 0.3753 | 0.3863 | 0.3973 | 0.4084 | 0.4194 | 0.4304 | 0.4415 | 0.4525 | 0.4636 | 0.4746 | 0.4856 | 0.4967 |

TABLE 2. Compton energy absorption cross sections (b/atom) in the energy region 1–100 MeV—Continued

| E(MeV) | Ga | Ge | S | Se | Br | Kr | Rb | Sr | Y | Zr | Nb | Mo | Tc | Ru | Rh |
|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 57 | 0.3375 | 0.3484 | 0.3593 | 0.3702 | 0.3811 | 0.3919 | 0.4028 | 0.4137 | 0.4246 | 0.4355 | 0.4464 | 0.4573 | 0.4681 | 0.4790 | 0.4899 |
| 58 | 0.3330 | 0.3437 | 0.3545 | 0.3652 | 0.3760 | 0.3867 | 0.3974 | 0.4082 | 0.4189 | 0.4297 | 0.4404 | 0.4512 | 0.4619 | 0.4726 | 0.4834 |
| 59 | 0.3286 | 0.3392 | 0.3498 | 0.3604 | 0.3710 | 0.3816 | 0.3922 | 0.4028 | 0.4134 | 0.4240 | 0.4346 | 0.4452 | 0.4558 | 0.4664 | 0.4770 |
| 60 | 0.3244 | 0.3348 | 0.3453 | 0.3557 | 0.3662 | 0.3767 | 0.3871 | 0.3976 | 0.4081 | 0.4185 | 0.4290 | 0.4395 | 0.4499 | 0.4604 | 0.4708 |
| 61 | 0.3202 | 0.3306 | 0.3409 | 0.3512 | 0.3615 | 0.3719 | 0.3822 | 0.3925 | 0.4029 | 0.4132 | 0.4235 | 0.4338 | 0.4442 | 0.4545 | 0.4648 |
| 62 | 0.3162 | 0.3264 | 0.3366 | 0.3468 | 0.3570 | 0.3672 | 0.3774 | 0.3876 | 0.3978 | 0.4080 | 0.4182 | 0.4284 | 0.4386 | 0.4488 | 0.4590 |
| 63 | 0.3123 | 0.3224 | 0.3324 | 0.3425 | 0.3526 | 0.3627 | 0.3727 | 0.3828 | 0.3929 | 0.4030 | 0.4130 | 0.4231 | 0.4332 | 0.4432 | 0.4533 |
| 64 | 0.3085 | 0.3184 | 0.3284 | 0.3383 | 0.3483 | 0.3582 | 0.3682 | 0.3781 | 0.3881 | 0.3980 | 0.4080 | 0.4179 | 0.4279 | 0.4378 | 0.4478 |
| 65 | 0.3048 | 0.3146 | 0.3244 | 0.3343 | 0.3441 | 0.3539 | 0.3638 | 0.3736 | 0.3834 | 0.3933 | 0.4031 | 0.4129 | 0.4228 | 0.4326 | 0.4424 |
| 66 | 0.3012 | 0.3109 | 0.3206 | 0.3303 | 0.3400 | 0.3497 | 0.3595 | 0.3692 | 0.3789 | 0.3886 | 0.3983 | 0.4080 | 0.4177 | 0.4275 | 0.4372 |
| 67 | 0.2976 | 0.3073 | 0.3169 | 0.3265 | 0.3361 | 0.3457 | 0.3553 | 0.3649 | 0.3745 | 0.3841 | 0.3937 | 0.4033 | 0.4129 | 0.4225 | 0.4321 |
| 68 | 0.2942 | 0.3037 | 0.3132 | 0.3227 | 0.3322 | 0.3417 | 0.3512 | 0.3607 | 0.3701 | 0.3796 | 0.3891 | 0.3986 | 0.4081 | 0.4176 | 0.4271 |
| 69 | 0.2909 | 0.3003 | 0.3096 | 0.3190 | 0.3284 | 0.3378 | 0.3472 | 0.3566 | 0.3659 | 0.3753 | 0.3847 | 0.3941 | 0.4035 | 0.4129 | 0.4222 |
| 70 | 0.2876 | 0.2969 | 0.3062 | 0.3155 | 0.3247 | 0.3340 | 0.3433 | 0.3526 | 0.3618 | 0.3711 | 0.3804 | 0.3897 | 0.3990 | 0.4082 | 0.4175 |
| 71 | 0.2844 | 0.2936 | 0.3028 | 0.3120 | 0.3211 | 0.3303 | 0.3395 | 0.3487 | 0.3578 | 0.3670 | 0.3762 | 0.3854 | 0.3945 | 0.4037 | 0.4129 |
| 72 | 0.2813 | 0.2904 | 0.2995 | 0.3086 | 0.3176 | 0.3267 | 0.3358 | 0.3449 | 0.3539 | 0.3630 | 0.3721 | 0.3812 | 0.3902 | 0.3993 | 0.4084 |
| 73 | 0.2783 | 0.2873 | 0.2963 | 0.3052 | 0.3142 | 0.3232 | 0.3322 | 0.3411 | 0.3501 | 0.3591 | 0.3681 | 0.3771 | 0.3860 | 0.3950 | 0.4040 |
| 74 | 0.2753 | 0.2842 | 0.2931 | 0.3020 | 0.3109 | 0.3198 | 0.3286 | 0.3375 | 0.3464 | 0.3553 | 0.3642 | 0.3730 | 0.3819 | 0.3908 | 0.3997 |
| 75 | 0.2724 | 0.2812 | 0.2900 | 0.2988 | 0.3076 | 0.3164 | 0.3252 | 0.3340 | 0.3428 | 0.3515 | 0.3603 | 0.3691 | 0.3779 | 0.3867 | 0.3955 |
| 76 | 0.2696 | 0.2783 | 0.2870 | 0.2957 | 0.3044 | 0.3131 | 0.3218 | 0.3305 | 0.3392 | 0.3479 | 0.3566 | 0.3653 | 0.3740 | 0.3827 | 0.3914 |
| 77 | 0.2669 | 0.2755 | 0.2841 | 0.2927 | 0.3013 | 0.3099 | 0.3185 | 0.3271 | 0.3357 | 0.3443 | 0.3529 | 0.3615 | 0.3702 | 0.3788 | 0.3874 |
| 78 | 0.2642 | 0.2727 | 0.2812 | 0.2897 | 0.2982 | 0.3068 | 0.3153 | 0.3238 | 0.3323 | 0.3408 | 0.3494 | 0.3579 | 0.3664 | 0.3749 | 0.3835 |
| 79 | 0.2615 | 0.2699 | 0.2784 | 0.2868 | 0.2953 | 0.3037 | 0.3121 | 0.3206 | 0.3290 | 0.3374 | 0.3459 | 0.3543 | 0.3627 | 0.3712 | 0.3796 |
| 80 | 0.2589 | 0.2673 | 0.2756 | 0.2840 | 0.2923 | 0.3007 | 0.3090 | 0.3174 | 0.3257 | 0.3341 | 0.3425 | 0.3508 | 0.3592 | 0.3675 | 0.3759 |
| 81 | 0.2564 | 0.2647 | 0.2729 | 0.2812 | 0.2895 | 0.2978 | 0.3060 | 0.3143 | 0.3226 | 0.3308 | 0.3391 | 0.3474 | 0.3556 | 0.3639 | 0.3722 |
| 82 | 0.2539 | 0.2621 | 0.2703 | 0.2785 | 0.2867 | 0.2949 | 0.3031 | 0.3113 | 0.3195 | 0.3276 | 0.3358 | 0.3440 | 0.3522 | 0.3604 | 0.3686 |
| 83 | 0.2515 | 0.2596 | 0.2677 | 0.2758 | 0.2839 | 0.2921 | 0.3002 | 0.3083 | 0.3164 | 0.3245 | 0.3326 | 0.3407 | 0.3489 | 0.3570 | 0.3651 |
| 84 | 0.2491 | 0.2572 | 0.2652 | 0.2732 | 0.2813 | 0.2893 | 0.2973 | 0.3054 | 0.3134 | 0.3214 | 0.3295 | 0.3375 | 0.3456 | 0.3536 | 0.3616 |
| 85 | 0.2468 | 0.2548 | 0.2627 | 0.2707 | 0.2786 | 0.2866 | 0.2946 | 0.3025 | 0.3105 | 0.3184 | 0.3264 | 0.3344 | 0.3423 | 0.3503 | 0.3583 |
| 86 | 0.2445 | 0.2524 | 0.2603 | 0.2682 | 0.2761 | 0.2840 | 0.2918 | 0.2997 | 0.3076 | 0.3155 | 0.3234 | 0.3313 | 0.3392 | 0.3471 | 0.3549 |
| 87 | 0.2423 | 0.2501 | 0.2579 | 0.2657 | 0.2735 | 0.2814 | 0.2892 | 0.2970 | 0.3048 | 0.3126 | 0.3204 | 0.3283 | 0.3361 | 0.3439 | 0.3517 |
| 88 | 0.2401 | 0.2478 | 0.2556 | 0.2633 | 0.2711 | 0.2788 | 0.2866 | 0.2943 | 0.3021 | 0.3098 | 0.3175 | 0.3253 | 0.3330 | 0.3408 | 0.3485 |
| 89 | 0.2379 | 0.2456 | 0.2533 | 0.2610 | 0.2687 | 0.2763 | 0.2840 | 0.2917 | 0.2994 | 0.3070 | 0.3147 | 0.3224 | 0.3301 | 0.3377 | 0.3454 |
| 90 | 0.2358 | 0.2435 | 0.2511 | 0.2587 | 0.2663 | 0.2739 | 0.2815 | 0.2891 | 0.2967 | 0.3043 | 0.3119 | 0.3195 | 0.3271 | 0.3347 | 0.3424 |
| 91 | 0.2338 | 0.2413 | 0.2489 | 0.2564 | 0.2639 | 0.2715 | 0.2790 | 0.2866 | 0.2941 | 0.3017 | 0.3092 | 0.3167 | 0.3243 | 0.3318 | 0.3394 |
| 92 | 0.2318 | 0.2392 | 0.2467 | 0.2542 | 0.2617 | 0.2691 | 0.2766 | 0.2841 | 0.2916 | 0.2990 | 0.3065 | 0.3140 | 0.3215 | 0.3289 | 0.3364 |
| 93 | 0.2298 | 0.2372 | 0.2446 | 0.2520 | 0.2594 | 0.2668 | 0.2742 | 0.2817 | 0.2891 | 0.2965 | 0.3039 | 0.3113 | 0.3187 | 0.3261 | 0.3335 |
| 94 | 0.2278 | 0.2352 | 0.2425 | 0.2499 | 0.2572 | 0.2646 | 0.2719 | 0.2793 | 0.2866 | 0.2940 | 0.3013 | 0.3087 | 0.3160 | 0.3234 | 0.3307 |
| 95 | 0.2259 | 0.2332 | 0.2405 | 0.2478 | 0.2551 | 0.2623 | 0.2696 | 0.2769 | 0.2842 | 0.2915 | 0.2988 | 0.3061 | 0.3133 | 0.3206 | 0.3279 |
| 96 | 0.2240 | 0.2312 | 0.2385 | 0.2457 | 0.2529 | 0.2602 | 0.2674 | 0.2746 | 0.2818 | 0.2891 | 0.2963 | 0.3035 | 0.3107 | 0.3180 | 0.3252 |
| 97 | 0.2222 | 0.2293 | 0.2365 | 0.2437 | 0.2508 | 0.2580 | 0.2652 | 0.2723 | 0.2795 | 0.2867 | 0.2938 | 0.3010 | 0.3082 | 0.3153 | 0.3225 |
| 98 | 0.2204 | 0.2275 | 0.2346 | 0.2417 | 0.2488 | 0.2559 | 0.2630 | 0.2701 | 0.2772 | 0.2843 | 0.2914 | 0.2986 | 0.3057 | 0.3128 | 0.3199 |
| 99 | 0.2186 | 0.2256 | 0.2327 | 0.2397 | 0.2468 | 0.2538 | 0.2609 | 0.2679 | 0.2750 | 0.2820 | 0.2891 | 0.2961 | 0.3032 | 0.3102 | 0.3173 |
| 100 | 0.2168 | 0.2238 | 0.2308 | 0.2378 | 0.2448 | 0.2518 | 0.2588 | 0.2658 | 0.2728 | 0.2798 | 0.2868 | 0.2938 | 0.3008 | 0.3078 | 0.3148 |
| E(MeV) | Pd | Ag | Cd | In | Sn | Sb | Te | I | Xe | Cs | Ba | La | Ce | Pr | Nd |
| 1 | 4.5946 | 4.6945 | 4.7944 | 4.8943 | 4.9941 | 5.0940 | 5.1939 | 5.2938 | 5.3937 | 5.4936 | 5.5934 | 5.6933 | 5.7932 | 5.8931 | 5.9930 |
| 2 | 3.8408 | 3.9243 | 4.0078 | 4.0913 | 4.1748 | 4.2583 | 4.3418 | 4.4253 | 4.5088 | 4.5923 | 4.6758 | 4.7593 | 4.8428 | 4.9263 | 5.0098 |
| 3 | 3.2848 | 3.3562 | 3.4276 | 3.4990 | 3.5704 | 3.6418 | 3.7132 | 3.7846 | 3.8560 | 3.9274 | 3.9989 | 4.0703 | 4.1417 | 4.2131 | 4.2845 |
| 4 | 2.8797 | 2.9423 | 3.0049 | 3.0675 | 3.1301 | 3.1927 | 3.2553 | 3.3179 | 3.3805 | 3.4431 | 3.5057 | 3.5683 | 3.6309 | 3.6935 | 3.7561 |
| 5 | 2.5726 | 2.6285 | 2.6845 | 2.7404 | 2.7963 | 2.8522 | 2.9082 | 2.9641 | 3.0200 | 3.0759 | 3.1319 | 3.1878 | 3.2437 | 3.2996 | 3.3556 |
| 6 | 2.3314 | 2.3821 | 2.4328 | 2.4835 | 2.5341 | 2.5848 | 2.6355 | 2.6862 | 2.7369 | 2.7876 | 2.8382 | 2.8889 | 2.9396 | 2.9903 | 3.0410 |
| 7 | 2.1365 | 2.1829 | 2.2293 | 2.2758 | 2.3222 | 2.3687 | 2.4151 | 2.4616 | 2.5080 | 2.5545 | 2.6009 | 2.6473 | 2.6938 | 2.7402 | 2.7867 |
| 8 | 1.9752 | 2.0181 | 2.0611 | 2.1040 | 2.1470 | 2.1899 | 2.2328 | 2.2758 | 2.3187 | 2.3616 | 2.4046 | 2.4475 | 2.4905 | 2.5334 | 2.5763 |
| 9 | 1.8393 | 1.8793 | 1.9193 | 1.9593 | 1.9992 | 2.0392 | 2.0792 | 2.1192 | 2.1592 | 2.1992 | 2.2392 | 2.2791 | 2.3191 | 2.3591 | 2.3991 |
| 10 | 1.7230 | 1.7605 | 1.7980 | 1.8354 | 1.8729 | 1.9103 | 1.9478 | 1.9852 | 2.0227 | 2.0602 | 2.0976 | 2.1351 | 2.1725 | 2.2100 | 2.2474 |
| 11 | 1.6223 | 1.6575 | 1.6928 | 1.7281 | 1.7633 | 1.7986 | 1.8339 | 1.8691 | 1.9044 | 1.9397 | 1.9749 | 2.0102 | 2.0455 | 2.0807 | 2.1160 |
| 12 | 1.5340 | 1.5673 | 1.6007 | 1.6340 | 1.6674 | 1.7007 | 1.7341 | 1.7674 | 1.8007 | 1.8341 | 1.8674 | 1.9008 | 1.9341 | 1.9675 | 2.0008 |
| 13 | 1.4559 | 1.4875 | 1.5192 | 1.5508 | 1.5825 | 1.6141 | 1.6458 | 1.6774 | 1.7091 | 1.7407 | 1.7724 | 1.8040 | 1.8357 | 1.8673 | 1.8990 |
| 14 | 1.3863 | 1.4164 | 1.4465 | 1.4767 | 1.5068 | 1.5369 | 1.5671 | 1.5972 | 1.6274 | 1.6575 | 1.6876 | 1.7178 | 1.7479 | 1.7781 | 1.8082 |
| 15 | 1.3238 | 1.3525 | 1.3813 | 1.4101 | 1.4389 | 1.4676 | 1.4964 | 1.5252 | 1.5540 | 1.5827 | 1.6115 | 1.6403 | 1.6691 | 1.6979 | 1.7266 |
| 16 | 1.2673 | 1.2948 | 1.3224 | 1.3499 | 1.3775 | 1.4050 | 1.4326 | 1.4601 | 1.4877 | 1.5152 | 1.5428 | 1.5703 | 1.5979 | 1.6254 | 1.6530 |
| 17 | 1.2160 | 1.2424 | 1.2688 | 1.2953 | 1.3217 | 1.3481 | 1.3746 | 1.4010 | 1.4274 | 1.4539 | 1.4803 | 1.5067 | 1.5332 | 1.5596 | 1.5860 |
| 18 | 1.1691 | 1.1945 | 1.2199 | 1.2453 | 1.2708 | 1.2962 | 1.3216 | 1.3470 | 1.3724 | 1.3978 | 1.4232 | 1.4487 | 1.4741 | 1.4995 | 1.5249 |
| 19 | 1.1261 | 1.1506 | 1.1751 | 1.1996 | 1.2240 | 1.2485 | 1.2730 | 1.2975 | 1.3220 | 1.3464 | 1.3709 | 1.3954 | 1.4199 | 1.4444 | 1.4688 |

TABLE 2. Compton energy absorption cross sections (b/atom) in the energy region 1–100 MeV—Continued

| E(MeV) | Pd | Ag | Cd | In | Sn | Sb | Te | I | Xe | Cs | Ba | La | Ce | Pr | Nd |
|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 20 | 1.0865 | 1.1102 | 1.1338 | 1.1574 | 1.1810 | 1.2046 | 1.2283 | 1.2519 | 1.2755 | 1.2991 | 1.3227 | 1.3464 | 1.3700 | 1.3936 | 1.4172 |
| 21 | 1.0499 | 1.0728 | 1.0956 | 1.1184 | 1.1412 | 1.1641 | 1.1869 | 1.2097 | 1.2325 | 1.2554 | 1.2782 | 1.3010 | 1.3238 | 1.3467 | 1.3695 |
| 22 | 1.0160 | 1.0381 | 1.0602 | 1.0823 | 1.1044 | 1.1264 | 1.1485 | 1.1706 | 1.1927 | 1.2148 | 1.2369 | 1.2590 | 1.2811 | 1.3031 | 1.3252 |
| 23 | 0.9844 | 1.0058 | 1.0272 | 1.0486 | 1.0701 | 1.0915 | 1.1129 | 1.1343 | 1.1557 | 1.1771 | 1.1985 | 1.2199 | 1.2413 | 1.2627 | 1.2841 |
| 24 | 0.9550 | 0.9758 | 0.9965 | 1.0173 | 1.0380 | 1.0588 | 1.0796 | 1.1003 | 1.1211 | 1.1418 | 1.1626 | 1.1834 | 1.2041 | 1.2249 | 1.2456 |
| 25 | 0.9274 | 0.9476 | 0.9678 | 0.9879 | 1.0081 | 1.0283 | 1.0484 | 1.0686 | 1.0887 | 1.1089 | 1.1291 | 1.1492 | 1.1694 | 1.1896 | 1.2097 |
| 26 | 0.9016 | 0.9212 | 0.9408 | 0.9604 | 0.9800 | 0.9996 | 1.0192 | 1.0388 | 1.0584 | 1.0780 | 1.0976 | 1.1172 | 1.1368 | 1.1564 | 1.1760 |
| 27 | 0.8773 | 0.8964 | 0.9155 | 0.9346 | 0.9536 | 0.9727 | 0.9918 | 1.0108 | 1.0299 | 1.0490 | 1.0681 | 1.0871 | 1.1062 | 1.1253 | 1.1444 |
| 28 | 0.8545 | 0.8730 | 0.8916 | 0.9102 | 0.9288 | 0.9473 | 0.9659 | 0.9845 | 1.0031 | 1.0216 | 1.0402 | 1.0588 | 1.0774 | 1.0960 | 1.1145 |
| 29 | 0.8329 | 0.8510 | 0.8691 | 0.8872 | 0.9053 | 0.9234 | 0.9415 | 0.9596 | 0.9777 | 0.9959 | 1.0140 | 1.0321 | 1.0502 | 1.0683 | 1.0864 |
| 30 | 0.8125 | 0.8302 | 0.8478 | 0.8655 | 0.8831 | 0.9008 | 0.9185 | 0.9361 | 0.9538 | 0.9715 | 0.9891 | 1.0068 | 1.0245 | 1.0421 | 1.0598 |
| 31 | 0.7932 | 0.8104 | 0.8277 | 0.8449 | 0.8622 | 0.8794 | 0.8966 | 0.9139 | 0.9311 | 0.9484 | 0.9656 | 0.9829 | 1.0001 | 1.0173 | 1.0346 |
| 32 | 0.7749 | 0.7917 | 0.8085 | 0.8254 | 0.8422 | 0.8591 | 0.8759 | 0.8928 | 0.9096 | 0.9265 | 0.9433 | 0.9601 | 0.9770 | 0.9938 | 1.0107 |
| 33 | 0.7574 | 0.7739 | 0.7904 | 0.8068 | 0.8233 | 0.8398 | 0.8562 | 0.8727 | 0.8892 | 0.9056 | 0.9221 | 0.9386 | 0.9550 | 0.9715 | 0.9880 |
| 34 | 0.7409 | 0.7570 | 0.7731 | 0.7892 | 0.8053 | 0.8214 | 0.8375 | 0.8536 | 0.8697 | 0.8858 | 0.9020 | 0.9181 | 0.9342 | 0.9503 | 0.9664 |
| 35 | 0.7251 | 0.7409 | 0.7566 | 0.7724 | 0.7882 | 0.8039 | 0.8197 | 0.8355 | 0.8512 | 0.8670 | 0.8827 | 0.8985 | 0.9143 | 0.9300 | 0.9458 |
| 36 | 0.7101 | 0.7255 | 0.7409 | 0.7564 | 0.7718 | 0.7872 | 0.8027 | 0.8181 | 0.8336 | 0.8490 | 0.8644 | 0.8799 | 0.8953 | 0.9107 | 0.9262 |
| 37 | 0.6957 | 0.7108 | 0.7259 | 0.7411 | 0.7562 | 0.7713 | 0.7864 | 0.8016 | 0.8167 | 0.8318 | 0.8469 | 0.8621 | 0.8772 | 0.8923 | 0.9074 |
| 38 | 0.6819 | 0.6968 | 0.7116 | 0.7264 | 0.7412 | 0.7561 | 0.7709 | 0.7857 | 0.8005 | 0.8154 | 0.8302 | 0.8450 | 0.8598 | 0.8747 | 0.8895 |
| 39 | 0.6688 | 0.6833 | 0.6979 | 0.7124 | 0.7270 | 0.7415 | 0.7560 | 0.7706 | 0.7851 | 0.7996 | 0.8142 | 0.8287 | 0.8433 | 0.8578 | 0.8723 |
| 40 | 0.6562 | 0.6705 | 0.6847 | 0.6990 | 0.7133 | 0.7275 | 0.7418 | 0.7560 | 0.7703 | 0.7846 | 0.7988 | 0.8131 | 0.8274 | 0.8416 | 0.8559 |
| 41 | 0.6441 | 0.6581 | 0.6721 | 0.6861 | 0.7001 | 0.7141 | 0.7281 | 0.7421 | 0.7561 | 0.7701 | 0.7841 | 0.7981 | 0.8121 | 0.8261 | 0.8401 |
| 42 | 0.6325 | 0.6462 | 0.6600 | 0.6737 | 0.6875 | 0.7012 | 0.7150 | 0.7287 | 0.7425 | 0.7562 | 0.7700 | 0.7837 | 0.7975 | 0.8112 | 0.8250 |
| 43 | 0.6213 | 0.6348 | 0.6484 | 0.6619 | 0.6754 | 0.6889 | 0.7024 | 0.7159 | 0.7294 | 0.7429 | 0.7564 | 0.7699 | 0.7834 | 0.7969 | 0.8104 |
| 44 | 0.6106 | 0.6239 | 0.6372 | 0.6504 | 0.6637 | 0.6770 | 0.6903 | 0.7035 | 0.7168 | 0.7301 | 0.7434 | 0.7566 | 0.7699 | 0.7832 | 0.7965 |
| 45 | 0.6003 | 0.6133 | 0.6264 | 0.6394 | 0.6525 | 0.6655 | 0.6786 | 0.6916 | 0.7047 | 0.7177 | 0.7308 | 0.7438 | 0.7569 | 0.7699 | 0.7830 |
| 46 | 0.5903 | 0.6032 | 0.6160 | 0.6288 | 0.6417 | 0.6545 | 0.6673 | 0.6802 | 0.6930 | 0.7058 | 0.7187 | 0.7315 | 0.7443 | 0.7572 | 0.7700 |
| 47 | 0.5808 | 0.5934 | 0.6060 | 0.6186 | 0.6313 | 0.6439 | 0.6565 | 0.6691 | 0.6818 | 0.6944 | 0.7070 | 0.7196 | 0.7323 | 0.7449 | 0.7575 |
| 48 | 0.5715 | 0.5839 | 0.5963 | 0.6088 | 0.6212 | 0.6336 | 0.6460 | 0.6585 | 0.6709 | 0.6833 | 0.6957 | 0.7082 | 0.7206 | 0.7330 | 0.7454 |
| 49 | 0.5626 | 0.5748 | 0.5870 | 0.5993 | 0.6115 | 0.6237 | 0.6359 | 0.6482 | 0.6604 | 0.6726 | 0.6849 | 0.6971 | 0.7093 | 0.7216 | 0.7338 |
| 50 | 0.5539 | 0.5660 | 0.5780 | 0.5901 | 0.6021 | 0.6141 | 0.6262 | 0.6382 | 0.6503 | 0.6623 | 0.6744 | 0.6864 | 0.6984 | 0.7105 | 0.7225 |
| 51 | 0.5456 | 0.5575 | 0.5693 | 0.5812 | 0.5930 | 0.6049 | 0.6168 | 0.6286 | 0.6405 | 0.6523 | 0.6642 | 0.6761 | 0.6879 | 0.6998 | 0.7116 |
| 52 | 0.5375 | 0.5492 | 0.5609 | 0.5726 | 0.5843 | 0.5959 | 0.6076 | 0.6193 | 0.6310 | 0.6427 | 0.6544 | 0.6661 | 0.6777 | 0.6894 | 0.7011 |
| 53 | 0.5297 | 0.5412 | 0.5527 | 0.5643 | 0.5758 | 0.5873 | 0.5988 | 0.6103 | 0.6218 | 0.6334 | 0.6449 | 0.6564 | 0.6679 | 0.6794 | 0.6909 |
| 54 | 0.5221 | 0.5335 | 0.5448 | 0.5562 | 0.5675 | 0.5789 | 0.5903 | 0.6016 | 0.6130 | 0.6243 | 0.6357 | 0.6470 | 0.6584 | 0.6697 | 0.6811 |
| 55 | 0.5148 | 0.5260 | 0.5372 | 0.5484 | 0.5596 | 0.5708 | 0.5820 | 0.5932 | 0.6043 | 0.6155 | 0.6267 | 0.6379 | 0.6491 | 0.6603 | 0.6715 |
| 56 | 0.5077 | 0.5187 | 0.5298 | 0.5408 | 0.5519 | 0.5629 | 0.5739 | 0.5850 | 0.5960 | 0.6070 | 0.6181 | 0.6291 | 0.6402 | 0.6512 | 0.6622 |
| 57 | 0.5008 | 0.5117 | 0.5226 | 0.5335 | 0.5444 | 0.5552 | 0.5661 | 0.5770 | 0.5879 | 0.5988 | 0.6097 | 0.6206 | 0.6315 | 0.6423 | 0.6532 |
| 58 | 0.4941 | 0.5049 | 0.5156 | 0.5263 | 0.5371 | 0.5478 | 0.5586 | 0.5693 | 0.5801 | 0.5908 | 0.6015 | 0.6123 | 0.6230 | 0.6338 | 0.6445 |
| 59 | 0.4876 | 0.4982 | 0.5088 | 0.5194 | 0.5300 | 0.5406 | 0.5512 | 0.5618 | 0.5724 | 0.5830 | 0.5936 | 0.6042 | 0.6148 | 0.6254 | 0.6360 |
| 60 | 0.4813 | 0.4918 | 0.5022 | 0.5127 | 0.5232 | 0.5336 | 0.5441 | 0.5545 | 0.5650 | 0.5755 | 0.5859 | 0.5964 | 0.6069 | 0.6173 | 0.6278 |
| 61 | 0.4752 | 0.4855 | 0.4958 | 0.5062 | 0.5165 | 0.5268 | 0.5371 | 0.5475 | 0.5578 | 0.5681 | 0.5785 | 0.5888 | 0.5991 | 0.6095 | 0.6198 |
| 62 | 0.4692 | 0.4794 | 0.4896 | 0.4998 | 0.5100 | 0.5202 | 0.5304 | 0.5406 | 0.5508 | 0.5610 | 0.5712 | 0.5814 | 0.5916 | 0.6018 | 0.6120 |
| 63 | 0.4634 | 0.4735 | 0.4835 | 0.4936 | 0.5037 | 0.5138 | 0.5238 | 0.5339 | 0.5440 | 0.5541 | 0.5641 | 0.5742 | 0.5843 | 0.5944 | 0.6044 |
| 64 | 0.4577 | 0.4677 | 0.4777 | 0.4876 | 0.4976 | 0.5075 | 0.5175 | 0.5274 | 0.5374 | 0.5473 | 0.5573 | 0.5672 | 0.5772 | 0.5871 | 0.5971 |
| 65 | 0.4522 | 0.4621 | 0.4719 | 0.4817 | 0.4916 | 0.5014 | 0.5112 | 0.5211 | 0.5309 | 0.5407 | 0.5506 | 0.5604 | 0.5702 | 0.5801 | 0.5899 |
| 66 | 0.4469 | 0.4566 | 0.4663 | 0.4760 | 0.4858 | 0.4955 | 0.5052 | 0.5149 | 0.5246 | 0.5343 | 0.5440 | 0.5538 | 0.5635 | 0.5732 | 0.5829 |
| 67 | 0.4417 | 0.4513 | 0.4609 | 0.4705 | 0.4801 | 0.4897 | 0.4993 | 0.5089 | 0.5185 | 0.5281 | 0.5377 | 0.5473 | 0.5569 | 0.5665 | 0.5761 |
| 68 | 0.4366 | 0.4461 | 0.4556 | 0.4651 | 0.4746 | 0.4840 | 0.4935 | 0.5030 | 0.5125 | 0.5220 | 0.5315 | 0.5410 | 0.5505 | 0.5600 | 0.5695 |
| 69 | 0.4316 | 0.4410 | 0.4504 | 0.4598 | 0.4692 | 0.4785 | 0.4879 | 0.4973 | 0.5067 | 0.5161 | 0.5255 | 0.5348 | 0.5442 | 0.5536 | 0.5630 |
| 70 | 0.4268 | 0.4361 | 0.4453 | 0.4546 | 0.4639 | 0.4732 | 0.4825 | 0.4917 | 0.5010 | 0.5103 | 0.5196 | 0.5288 | 0.5381 | 0.5474 | 0.5567 |
| 71 | 0.4221 | 0.4312 | 0.4404 | 0.4496 | 0.4588 | 0.4679 | 0.4771 | 0.4863 | 0.4955 | 0.5046 | 0.5138 | 0.5230 | 0.5322 | 0.5413 | 0.5505 |
| 72 | 0.4175 | 0.4265 | 0.4356 | 0.4447 | 0.4538 | 0.4628 | 0.4719 | 0.4810 | 0.4901 | 0.4991 | 0.5082 | 0.5173 | 0.5264 | 0.5354 | 0.5445 |
| 73 | 0.4130 | 0.4219 | 0.4309 | 0.4399 | 0.4489 | 0.4579 | 0.4668 | 0.4758 | 0.4848 | 0.4938 | 0.5027 | 0.5117 | 0.5207 | 0.5297 | 0.5386 |
| 74 | 0.4086 | 0.4175 | 0.4263 | 0.4352 | 0.4441 | 0.4530 | 0.4619 | 0.4707 | 0.4796 | 0.4885 | 0.4974 | 0.5063 | 0.5152 | 0.5240 | 0.5329 |
| 75 | 0.4043 | 0.4131 | 0.4219 | 0.4306 | 0.4394 | 0.4482 | 0.4570 | 0.4658 | 0.4746 | 0.4834 | 0.4922 | 0.5010 | 0.5097 | 0.5185 | 0.5273 |
| 76 | 0.4001 | 0.4088 | 0.4175 | 0.4262 | 0.4349 | 0.4436 | 0.4523 | 0.4610 | 0.4697 | 0.4784 | 0.4871 | 0.4958 | 0.5045 | 0.5132 | 0.5218 |
| 77 | 0.3960 | 0.4046 | 0.4132 | 0.4218 | 0.4304 | 0.4390 | 0.4476 | 0.4562 | 0.4648 | 0.4735 | 0.4821 | 0.4907 | 0.4993 | 0.5079 | 0.5165 |
| 78 | 0.3920 | 0.4005 | 0.4090 | 0.4175 | 0.4261 | 0.4346 | 0.4431 | 0.4516 | 0.4601 | 0.4687 | 0.4772 | 0.4857 | 0.4942 | 0.5027 | 0.5113 |
| 79 | 0.3881 | 0.3965 | 0.4049 | 0.4134 | 0.4218 | 0.4302 | 0.4387 | 0.4471 | 0.4555 | 0.4640 | 0.4724 | 0.4808 | 0.4893 | 0.4977 | 0.5062 |
| 80 | 0.3842 | 0.3926 | 0.4009 | 0.4093 | 0.4176 | 0.4260 | 0.4343 | 0.4427 | 0.4510 | 0.4594 | 0.4677 | 0.4761 | 0.4844 | 0.4928 | 0.5012 |
| 81 | 0.3805 | 0.3887 | 0.3970 | 0.4053 | 0.4135 | 0.4218 | 0.4301 | 0.4384 | 0.4466 | 0.4549 | 0.4632 | 0.4714 | 0.4797 | 0.4880 | 0.4963 |
| 82 | 0.3768 | 0.3850 | 0.3932 | 0.4014 | 0.4096 | 0.4177 | 0.4259 | 0.4341 | 0.4423 | 0.4505 | 0.4587 | 0.4669 | 0.4751 | 0.4833 | 0.4915 |
| 83 | 0.3732 | 0.3813 | 0.3894 | 0.3975 | 0.4056 | 0.4138 | 0.4219 | 0.4300 | 0.4381 | 0.4462 | 0.4543 | 0.4624 | 0.4705 | 0.4787 | 0.4868 |
| 84 | 0.3697 | 0.3777 | 0.3857 | 0.3938 | 0.4018 | 0.4098 | 0.4179 | 0.4259 | 0.4340 | 0.4420 | 0.4500 | 0.4581 | 0.4661 | 0.4741 | 0.4822 |

TABLE 2. Compton energy absorption cross sections (b/atom) in the energy region 1–100 MeV—Continued

| <i>E</i> (MeV) | Pd | Ag | Cd | In | Sn | Sb | Te | I | Xe | Cs | Ba | La | Ce | Pr | Nd |
|----------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 85 | 0.3662 | 0.3742 | 0.3821 | 0.3901 | 0.3981 | 0.4060 | 0.4140 | 0.4219 | 0.4299 | 0.4379 | 0.4458 | 0.4538 | 0.4617 | 0.4697 | 0.4777 |
| 86 | 0.3628 | 0.3707 | 0.3786 | 0.3865 | 0.3944 | 0.4023 | 0.4102 | 0.4180 | 0.4259 | 0.4338 | 0.4417 | 0.4496 | 0.4575 | 0.4654 | 0.4733 |
| 87 | 0.3595 | 0.3673 | 0.3752 | 0.3830 | 0.3908 | 0.3986 | 0.4064 | 0.4142 | 0.4220 | 0.4299 | 0.4377 | 0.4455 | 0.4533 | 0.4611 | 0.4689 |
| 88 | 0.3563 | 0.3640 | 0.3718 | 0.3795 | 0.3873 | 0.3950 | 0.4027 | 0.4105 | 0.4182 | 0.4260 | 0.4337 | 0.4415 | 0.4492 | 0.4570 | 0.4647 |
| 89 | 0.3531 | 0.3608 | 0.3684 | 0.3761 | 0.3838 | 0.3915 | 0.3991 | 0.4068 | 0.4145 | 0.4222 | 0.4298 | 0.4375 | 0.4452 | 0.4529 | 0.4605 |
| 90 | 0.3500 | 0.3576 | 0.3652 | 0.3728 | 0.3804 | 0.3880 | 0.3956 | 0.4032 | 0.4108 | 0.4184 | 0.4260 | 0.4336 | 0.4413 | 0.4489 | 0.4565 |
| 91 | 0.3469 | 0.3544 | 0.3620 | 0.3695 | 0.3771 | 0.3846 | 0.3921 | 0.3997 | 0.4072 | 0.4148 | 0.4223 | 0.4299 | 0.4374 | 0.4449 | 0.4525 |
| 92 | 0.3439 | 0.3514 | 0.3588 | 0.3663 | 0.3738 | 0.3813 | 0.3887 | 0.3962 | 0.4037 | 0.4112 | 0.4187 | 0.4261 | 0.4336 | 0.4411 | 0.4486 |
| 93 | 0.3409 | 0.3484 | 0.3558 | 0.3632 | 0.3706 | 0.3780 | 0.3854 | 0.3928 | 0.4002 | 0.4077 | 0.4151 | 0.4225 | 0.4299 | 0.4373 | 0.4447 |
| 94 | 0.3381 | 0.3454 | 0.3527 | 0.3601 | 0.3674 | 0.3748 | 0.3821 | 0.3895 | 0.3968 | 0.4042 | 0.4115 | 0.4189 | 0.4262 | 0.4336 | 0.4409 |
| 95 | 0.3352 | 0.3425 | 0.3498 | 0.3571 | 0.3644 | 0.3716 | 0.3789 | 0.3862 | 0.3935 | 0.4008 | 0.4081 | 0.4154 | 0.4227 | 0.4299 | 0.4372 |
| 96 | 0.3324 | 0.3396 | 0.3469 | 0.3541 | 0.3613 | 0.3686 | 0.3758 | 0.3830 | 0.3902 | 0.3975 | 0.4047 | 0.4119 | 0.4191 | 0.4264 | 0.4336 |
| 97 | 0.3297 | 0.3368 | 0.3440 | 0.3512 | 0.3583 | 0.3655 | 0.3727 | 0.3798 | 0.3870 | 0.3942 | 0.4014 | 0.4085 | 0.4157 | 0.4229 | 0.4300 |
| 98 | 0.3270 | 0.3341 | 0.3412 | 0.3483 | 0.3554 | 0.3625 | 0.3696 | 0.3767 | 0.3839 | 0.3910 | 0.3981 | 0.4052 | 0.4123 | 0.4194 | 0.4265 |
| 99 | 0.3243 | 0.3314 | 0.3384 | 0.3455 | 0.3526 | 0.3596 | 0.3667 | 0.3737 | 0.3808 | 0.3878 | 0.3949 | 0.4019 | 0.4090 | 0.4160 | 0.4231 |
| 100 | 0.3218 | 0.3287 | 0.3357 | 0.3427 | 0.3497 | 0.3567 | 0.3637 | 0.3707 | 0.3777 | 0.3847 | 0.3917 | 0.3987 | 0.4057 | 0.4127 | 0.4197 |
| <i>E</i> (MeV) | Pm | Sm | Eu | Gd | Tb | Dy | Ho | Er | Tm | Yb | Lu | Hf | Ta | W | Re |
| 1 | 6.0929 | 6.1927 | 6.2926 | 6.3925 | 6.4924 | 6.5923 | 6.6922 | 6.7920 | 6.8919 | 6.9918 | 7.0917 | 7.1916 | 7.2915 | 7.3913 | 7.4912 |
| 2 | 5.0933 | 5.1768 | 5.2603 | 5.3438 | 5.4273 | 5.5108 | 5.5943 | 5.6778 | 5.7613 | 5.8448 | 5.9283 | 6.0118 | 6.0953 | 6.1788 | 6.2622 |
| 3 | 4.3559 | 4.4273 | 4.4987 | 4.5701 | 4.6415 | 4.7129 | 4.7843 | 4.8558 | 4.9272 | 4.9986 | 5.0700 | 5.1414 | 5.2128 | 5.2842 | 5.3556 |
| 4 | 3.8187 | 3.8813 | 3.9439 | 4.0065 | 4.0691 | 4.1317 | 4.1943 | 4.2569 | 4.3195 | 4.3821 | 4.4447 | 4.5073 | 4.5699 | 4.6325 | 4.6951 |
| 5 | 3.4115 | 3.4674 | 3.5233 | 3.5793 | 3.6352 | 3.6911 | 3.7471 | 3.8030 | 3.8589 | 3.9148 | 3.9708 | 4.0267 | 4.0826 | 4.1385 | 4.1945 |
| 6 | 3.0917 | 3.1423 | 3.1930 | 3.2437 | 3.2944 | 3.3451 | 3.3958 | 3.4464 | 3.4971 | 3.5478 | 3.5985 | 3.6492 | 3.6999 | 3.7505 | 3.8012 |
| 7 | 2.8331 | 2.8796 | 2.9260 | 2.9725 | 3.0189 | 3.0653 | 3.1118 | 3.1582 | 3.2047 | 3.2511 | 3.2976 | 3.3440 | 3.3905 | 3.4369 | 3.4833 |
| 8 | 2.6193 | 2.6622 | 2.7052 | 2.7481 | 2.7910 | 2.8340 | 2.8769 | 2.9199 | 2.9628 | 3.0057 | 3.0487 | 3.0916 | 3.1345 | 3.1775 | 3.2204 |
| 9 | 2.4391 | 2.4791 | 2.5191 | 2.5590 | 2.5990 | 2.6390 | 2.6790 | 2.7190 | 2.7590 | 2.7989 | 2.8389 | 2.8789 | 2.9189 | 2.9589 | 2.9989 |
| 10 | 2.2849 | 2.3224 | 2.3598 | 2.3973 | 2.4347 | 2.4722 | 2.5096 | 2.5471 | 2.5846 | 2.6220 | 2.6595 | 2.6969 | 2.7344 | 2.7718 | 2.8093 |
| 11 | 2.1513 | 2.1865 | 2.2218 | 2.2571 | 2.2923 | 2.3276 | 2.3629 | 2.3981 | 2.4334 | 2.4687 | 2.5039 | 2.5392 | 2.5745 | 2.6097 | 2.6450 |
| 12 | 2.0342 | 2.0675 | 2.1009 | 2.1342 | 2.1676 | 2.2009 | 2.2343 | 2.2676 | 2.3010 | 2.3343 | 2.3676 | 2.4010 | 2.4343 | 2.4677 | 2.5010 |
| 13 | 1.9306 | 1.9623 | 1.9939 | 2.0256 | 2.0572 | 2.0889 | 2.1205 | 2.1522 | 2.1838 | 2.2155 | 2.2471 | 2.2788 | 2.3104 | 2.3421 | 2.3737 |
| 14 | 1.8383 | 1.8684 | 1.8986 | 1.9287 | 1.9588 | 1.9890 | 2.0191 | 2.0493 | 2.0794 | 2.1095 | 2.1397 | 2.1698 | 2.1999 | 2.2301 | 2.2602 |
| 15 | 1.7554 | 1.7842 | 1.8130 | 1.8417 | 1.8705 | 1.8993 | 1.9281 | 1.9568 | 1.9856 | 2.0144 | 2.0432 | 2.0720 | 2.1007 | 2.1295 | 2.1583 |
| 16 | 1.6805 | 1.7081 | 1.7356 | 1.7632 | 1.7907 | 1.8183 | 1.8458 | 1.8734 | 1.9009 | 1.9285 | 1.9560 | 1.9836 | 2.0111 | 2.0386 | 2.0662 |
| 17 | 1.6125 | 1.6389 | 1.6653 | 1.6918 | 1.7182 | 1.7446 | 1.7711 | 1.7975 | 1.8239 | 1.8504 | 1.8768 | 1.9032 | 1.9297 | 1.9561 | 1.9825 |
| 18 | 1.5503 | 1.5757 | 1.6011 | 1.6266 | 1.6520 | 1.6774 | 1.7028 | 1.7282 | 1.7536 | 1.7791 | 1.8045 | 1.8299 | 1.8553 | 1.8807 | 1.9061 |
| 19 | 1.4933 | 1.5178 | 1.5423 | 1.5668 | 1.5912 | 1.6157 | 1.6402 | 1.6647 | 1.6892 | 1.7136 | 1.7381 | 1.7626 | 1.7871 | 1.8116 | 1.8361 |
| 20 | 1.4408 | 1.4645 | 1.4881 | 1.5117 | 1.5353 | 1.5589 | 1.5826 | 1.6062 | 1.6298 | 1.6534 | 1.6770 | 1.7007 | 1.7243 | 1.7479 | 1.7715 |
| 21 | 1.3923 | 1.4151 | 1.4380 | 1.4608 | 1.4836 | 1.5064 | 1.5293 | 1.5521 | 1.5749 | 1.5977 | 1.6206 | 1.6434 | 1.6662 | 1.6890 | 1.7119 |
| 22 | 1.3473 | 1.3694 | 1.3915 | 1.4136 | 1.4357 | 1.4578 | 1.4798 | 1.5019 | 1.5240 | 1.5461 | 1.5682 | 1.5903 | 1.6124 | 1.6345 | 1.6565 |
| 23 | 1.3055 | 1.3269 | 1.3483 | 1.3697 | 1.3911 | 1.4125 | 1.4339 | 1.4553 | 1.4767 | 1.4981 | 1.5195 | 1.5409 | 1.5623 | 1.5837 | 1.6051 |
| 24 | 1.2664 | 1.2872 | 1.3079 | 1.3287 | 1.3494 | 1.3702 | 1.3910 | 1.4117 | 1.4325 | 1.4533 | 1.4740 | 1.4948 | 1.5155 | 1.5363 | 1.5571 |
| 25 | 1.2299 | 1.2500 | 1.2702 | 1.2904 | 1.3105 | 1.3307 | 1.3508 | 1.3710 | 1.3912 | 1.4113 | 1.4315 | 1.4517 | 1.4718 | 1.4920 | 1.5121 |
| 26 | 1.1956 | 1.2152 | 1.2348 | 1.2544 | 1.2740 | 1.2936 | 1.3132 | 1.3328 | 1.3524 | 1.3720 | 1.3916 | 1.4112 | 1.4308 | 1.4504 | 1.4700 |
| 27 | 1.1634 | 1.1825 | 1.2016 | 1.2206 | 1.2397 | 1.2588 | 1.2779 | 1.2969 | 1.3160 | 1.3351 | 1.3541 | 1.3732 | 1.3923 | 1.4114 | 1.4304 |
| 28 | 1.1331 | 1.1517 | 1.1703 | 1.1888 | 1.2074 | 1.2260 | 1.2446 | 1.2631 | 1.2817 | 1.3003 | 1.3189 | 1.3374 | 1.3560 | 1.3746 | 1.3932 |
| 29 | 1.1045 | 1.1226 | 1.1407 | 1.1588 | 1.1769 | 1.1950 | 1.2131 | 1.2312 | 1.2493 | 1.2674 | 1.2856 | 1.3037 | 1.3218 | 1.3399 | 1.3580 |
| 30 | 1.0774 | 1.0951 | 1.1128 | 1.1304 | 1.1481 | 1.1658 | 1.1834 | 1.2011 | 1.2187 | 1.2364 | 1.2541 | 1.2717 | 1.2894 | 1.3071 | 1.3247 |
| 31 | 1.0518 | 1.0691 | 1.0863 | 1.1036 | 1.1208 | 1.1380 | 1.1553 | 1.1725 | 1.1898 | 1.2070 | 1.2243 | 1.2415 | 1.2587 | 1.2760 | 1.2932 |
| 32 | 1.0275 | 1.0444 | 1.0612 | 1.0781 | 1.0949 | 1.1117 | 1.1286 | 1.1454 | 1.1623 | 1.1791 | 1.1960 | 1.2128 | 1.2297 | 1.2465 | 1.2634 |
| 33 | 1.0044 | 1.0209 | 1.0374 | 1.0538 | 1.0703 | 1.0868 | 1.1032 | 1.1197 | 1.1362 | 1.1526 | 1.1691 | 1.1856 | 1.2020 | 1.2185 | 1.2350 |
| 34 | 0.9825 | 0.9986 | 1.0147 | 1.0308 | 1.0469 | 1.0630 | 1.0791 | 1.0952 | 1.1113 | 1.1274 | 1.1435 | 1.1597 | 1.1758 | 1.1919 | 1.2080 |
| 35 | 0.9616 | 0.9773 | 0.9931 | 1.0089 | 1.0246 | 1.0404 | 1.0561 | 1.0719 | 1.0877 | 1.1034 | 1.1192 | 1.1350 | 1.1507 | 1.1665 | 1.1822 |
| 36 | 0.9416 | 0.9570 | 0.9725 | 0.9879 | 1.0034 | 1.0188 | 1.0342 | 1.0497 | 1.0651 | 1.0805 | 1.0960 | 1.1114 | 1.1268 | 1.1423 | 1.1577 |
| 37 | 0.9225 | 0.9377 | 0.9528 | 0.9679 | 0.9830 | 0.9982 | 1.0133 | 1.0284 | 1.0435 | 1.0587 | 1.0738 | 1.0889 | 1.1040 | 1.1192 | 1.1343 |
| 38 | 0.9043 | 0.9191 | 0.9340 | 0.9488 | 0.9636 | 0.9784 | 0.9933 | 1.0081 | 1.0229 | 1.0377 | 1.0526 | 1.0674 | 1.0822 | 1.0970 | 1.1119 |
| 39 | 0.8869 | 0.9014 | 0.9160 | 0.9305 | 0.9450 | 0.9596 | 0.9741 | 0.9887 | 1.0032 | 1.0177 | 1.0323 | 1.0468 | 1.0613 | 1.0759 | 1.0904 |
| 40 | 0.8702 | 0.8844 | 0.8987 | 0.9130 | 0.9272 | 0.9415 | 0.9558 | 0.9700 | 0.9843 | 0.9986 | 1.0128 | 1.0271 | 1.0413 | 1.0556 | 1.0699 |
| 41 | 0.8541 | 0.8681 | 0.8821 | 0.8961 | 0.9101 | 0.9241 | 0.9381 | 0.9522 | 0.9662 | 0.9802 | 0.9942 | 1.0082 | 1.0222 | 1.0362 | 1.0502 |
| 42 | 0.8387 | 0.8525 | 0.8662 | 0.8800 | 0.8937 | 0.9075 | 0.9212 | 0.9350 | 0.9487 | 0.9625 | 0.9762 | 0.9900 | 1.0037 | 1.0175 | 1.0312 |
| 43 | 0.8240 | 0.8375 | 0.8510 | 0.8645 | 0.8780 | 0.8915 | 0.9050 | 0.9185 | 0.9320 | 0.9455 | 0.9590 | 0.9725 | 0.9860 | 0.9996 | 1.0131 |
| 44 | 0.8097 | 0.8230 | 0.8363 | 0.8496 | 0.8628 | 0.8761 | 0.8894 | 0.9026 | 0.9159 | 0.9292 | 0.9425 | 0.9557 | 0.9690 | 0.9823 | 0.9956 |
| 45 | 0.7960 | 0.8091 | 0.8221 | 0.8352 | 0.8482 | 0.8613 | 0.8743 | 0.8874 | 0.9004 | 0.9135 | 0.9265 | 0.9396 | 0.9526 | 0.9657 | 0.9787 |
| 46 | 0.7828 | 0.7957 | 0.8085 | 0.8213 | 0.8342 | 0.8470 | 0.8598 | 0.8727 | 0.8855 | 0.8983 | 0.9112 | 0.9240 | 0.9368 | 0.9497 | 0.9625 |
| 47 | 0.7701 | 0.7828 | 0.7954 | 0.8080 | 0.8206 | 0.8333 | 0.8459 | 0.8585 | 0.8711 | 0.8838 | 0.8964 | 0.9090 | 0.9216 | 0.9343 | 0.9469 |

TABLE 2. Compton energy absorption cross sections (b/atom) in the energy region 1–100 MeV—Continued

| E(MeV) | Pm | Sm | Eu | Gd | Tb | Dy | Ho | Er | Tm | Yb | Lu | Hf | Ta | W | Re |
|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 48 | 0.7579 | 0.7703 | 0.7827 | 0.7951 | 0.8076 | 0.8200 | 0.8324 | 0.8448 | 0.8572 | 0.8697 | 0.8821 | 0.8945 | 0.9069 | 0.9194 | 0.9318 |
| 49 | 0.7460 | 0.7582 | 0.7705 | 0.7827 | 0.7949 | 0.8072 | 0.8194 | 0.8316 | 0.8439 | 0.8561 | 0.8683 | 0.8805 | 0.8928 | 0.9050 | 0.9172 |
| 50 | 0.7346 | 0.7466 | 0.7587 | 0.7707 | 0.7827 | 0.7948 | 0.8068 | 0.8189 | 0.8309 | 0.8429 | 0.8550 | 0.8670 | 0.8791 | 0.8911 | 0.9032 |
| 51 | 0.7235 | 0.7354 | 0.7472 | 0.7591 | 0.7709 | 0.7828 | 0.7947 | 0.8065 | 0.8184 | 0.8303 | 0.8421 | 0.8540 | 0.8658 | 0.8777 | 0.8896 |
| 52 | 0.7128 | 0.7245 | 0.7362 | 0.7479 | 0.7595 | 0.7712 | 0.7829 | 0.7946 | 0.8063 | 0.8180 | 0.8297 | 0.8413 | 0.8530 | 0.8647 | 0.8764 |
| 53 | 0.7024 | 0.7140 | 0.7255 | 0.7370 | 0.7485 | 0.7600 | 0.7715 | 0.7831 | 0.7946 | 0.8061 | 0.8176 | 0.8291 | 0.8406 | 0.8521 | 0.8637 |
| 54 | 0.6924 | 0.7038 | 0.7151 | 0.7265 | 0.7378 | 0.7492 | 0.7605 | 0.7719 | 0.7832 | 0.7946 | 0.8059 | 0.8173 | 0.8286 | 0.8400 | 0.8513 |
| 55 | 0.6827 | 0.6939 | 0.7051 | 0.7163 | 0.7275 | 0.7386 | 0.7498 | 0.7610 | 0.7722 | 0.7834 | 0.7946 | 0.8058 | 0.8170 | 0.8282 | 0.8394 |
| 56 | 0.6733 | 0.6843 | 0.6953 | 0.7064 | 0.7174 | 0.7284 | 0.7395 | 0.7505 | 0.7616 | 0.7726 | 0.7836 | 0.7947 | 0.8057 | 0.8167 | 0.8278 |
| 57 | 0.6641 | 0.6750 | 0.6859 | 0.6968 | 0.7077 | 0.7186 | 0.7294 | 0.7403 | 0.7512 | 0.7621 | 0.7730 | 0.7839 | 0.7948 | 0.8057 | 0.8165 |
| 58 | 0.6552 | 0.6660 | 0.6767 | 0.6875 | 0.6982 | 0.7090 | 0.7197 | 0.7304 | 0.7412 | 0.7519 | 0.7627 | 0.7734 | 0.7841 | 0.7949 | 0.8056 |
| 59 | 0.6466 | 0.6572 | 0.6678 | 0.6784 | 0.6890 | 0.6996 | 0.7102 | 0.7208 | 0.7314 | 0.7420 | 0.7526 | 0.7632 | 0.7738 | 0.7844 | 0.7950 |
| 60 | 0.6383 | 0.6487 | 0.6592 | 0.6696 | 0.6801 | 0.6906 | 0.7010 | 0.7115 | 0.7220 | 0.7324 | 0.7429 | 0.7533 | 0.7638 | 0.7743 | 0.7847 |
| 61 | 0.6301 | 0.6404 | 0.6508 | 0.6611 | 0.6714 | 0.6818 | 0.6921 | 0.7024 | 0.7128 | 0.7231 | 0.7334 | 0.7437 | 0.7541 | 0.7644 | 0.7747 |
| 62 | 0.6222 | 0.6324 | 0.6426 | 0.6528 | 0.6630 | 0.6732 | 0.6834 | 0.6936 | 0.7038 | 0.7140 | 0.7242 | 0.7344 | 0.7446 | 0.7548 | 0.7650 |
| 63 | 0.6145 | 0.6246 | 0.6347 | 0.6447 | 0.6548 | 0.6649 | 0.6749 | 0.6850 | 0.6951 | 0.7052 | 0.7152 | 0.7253 | 0.7354 | 0.7455 | 0.7555 |
| 64 | 0.6070 | 0.6170 | 0.6269 | 0.6369 | 0.6468 | 0.6568 | 0.6667 | 0.6767 | 0.6866 | 0.6966 | 0.7065 | 0.7165 | 0.7264 | 0.7364 | 0.7463 |
| 65 | 0.5997 | 0.6096 | 0.6194 | 0.6292 | 0.6390 | 0.6489 | 0.6587 | 0.6685 | 0.6784 | 0.6882 | 0.6980 | 0.7079 | 0.7177 | 0.7275 | 0.7374 |
| 66 | 0.5926 | 0.6023 | 0.6120 | 0.6218 | 0.6315 | 0.6412 | 0.6509 | 0.6606 | 0.6703 | 0.6801 | 0.6898 | 0.6995 | 0.7092 | 0.7189 | 0.7286 |
| 67 | 0.5857 | 0.5953 | 0.6049 | 0.6145 | 0.6241 | 0.6337 | 0.6433 | 0.6529 | 0.6625 | 0.6721 | 0.6817 | 0.6913 | 0.7009 | 0.7105 | 0.7201 |
| 68 | 0.5790 | 0.5884 | 0.5979 | 0.6074 | 0.6169 | 0.6264 | 0.6359 | 0.6454 | 0.6549 | 0.6644 | 0.6739 | 0.6834 | 0.6928 | 0.7023 | 0.7118 |
| 69 | 0.5724 | 0.5818 | 0.5911 | 0.6005 | 0.6099 | 0.6193 | 0.6287 | 0.6381 | 0.6474 | 0.6568 | 0.6662 | 0.6756 | 0.6850 | 0.6944 | 0.7037 |
| 70 | 0.5660 | 0.5752 | 0.5845 | 0.5938 | 0.6031 | 0.6123 | 0.6216 | 0.6309 | 0.6402 | 0.6495 | 0.6587 | 0.6680 | 0.6773 | 0.6866 | 0.6959 |
| 71 | 0.5597 | 0.5689 | 0.5781 | 0.5872 | 0.5964 | 0.6056 | 0.6148 | 0.6239 | 0.6331 | 0.6423 | 0.6515 | 0.6606 | 0.6698 | 0.6790 | 0.6882 |
| 72 | 0.5536 | 0.5627 | 0.5717 | 0.5808 | 0.5899 | 0.5990 | 0.6080 | 0.6171 | 0.6262 | 0.6353 | 0.6443 | 0.6534 | 0.6625 | 0.6716 | 0.6806 |
| 73 | 0.5476 | 0.5566 | 0.5656 | 0.5746 | 0.5835 | 0.5925 | 0.6015 | 0.6105 | 0.6194 | 0.6284 | 0.6374 | 0.6464 | 0.6554 | 0.6643 | 0.6733 |
| 74 | 0.5418 | 0.5507 | 0.5596 | 0.5684 | 0.5773 | 0.5862 | 0.5951 | 0.6040 | 0.6129 | 0.6217 | 0.6306 | 0.6395 | 0.6484 | 0.6573 | 0.6661 |
| 75 | 0.5361 | 0.5449 | 0.5537 | 0.5625 | 0.5713 | 0.5801 | 0.5888 | 0.5976 | 0.6064 | 0.6152 | 0.6240 | 0.6328 | 0.6416 | 0.6504 | 0.6591 |
| 76 | 0.5305 | 0.5392 | 0.5479 | 0.5566 | 0.5653 | 0.5740 | 0.5827 | 0.5914 | 0.6001 | 0.6088 | 0.6175 | 0.6262 | 0.6349 | 0.6436 | 0.6523 |
| 77 | 0.5251 | 0.5337 | 0.5423 | 0.5509 | 0.5595 | 0.5681 | 0.5768 | 0.5854 | 0.5940 | 0.6026 | 0.6112 | 0.6198 | 0.6284 | 0.6370 | 0.6456 |
| 78 | 0.5198 | 0.5283 | 0.5368 | 0.5454 | 0.5539 | 0.5624 | 0.5709 | 0.5794 | 0.5880 | 0.5965 | 0.6050 | 0.6135 | 0.6220 | 0.6306 | 0.6391 |
| 79 | 0.5146 | 0.5230 | 0.5315 | 0.5399 | 0.5483 | 0.5568 | 0.5652 | 0.5736 | 0.5821 | 0.5905 | 0.5990 | 0.6074 | 0.6158 | 0.6243 | 0.6327 |
| 80 | 0.5095 | 0.5179 | 0.5262 | 0.5346 | 0.5429 | 0.5513 | 0.5596 | 0.5680 | 0.5763 | 0.5847 | 0.5930 | 0.6014 | 0.6097 | 0.6181 | 0.6264 |
| 81 | 0.5045 | 0.5128 | 0.5211 | 0.5293 | 0.5376 | 0.5459 | 0.5542 | 0.5624 | 0.5707 | 0.5790 | 0.5872 | 0.5955 | 0.6038 | 0.6120 | 0.6203 |
| 82 | 0.4997 | 0.5078 | 0.5160 | 0.5242 | 0.5324 | 0.5406 | 0.5488 | 0.5570 | 0.5652 | 0.5734 | 0.5816 | 0.5898 | 0.5979 | 0.6061 | 0.6143 |
| 83 | 0.4949 | 0.5030 | 0.5111 | 0.5192 | 0.5273 | 0.5354 | 0.5436 | 0.5517 | 0.5598 | 0.5679 | 0.5760 | 0.5841 | 0.5922 | 0.6003 | 0.6085 |
| 84 | 0.4902 | 0.4982 | 0.5063 | 0.5143 | 0.5224 | 0.5304 | 0.5384 | 0.5465 | 0.5545 | 0.5625 | 0.5706 | 0.5786 | 0.5866 | 0.5947 | 0.6027 |
| 85 | 0.4856 | 0.4936 | 0.5016 | 0.5095 | 0.5175 | 0.5254 | 0.5334 | 0.5414 | 0.5493 | 0.5573 | 0.5652 | 0.5732 | 0.5812 | 0.5891 | 0.5971 |
| 86 | 0.4811 | 0.4890 | 0.4969 | 0.5048 | 0.5127 | 0.5206 | 0.5285 | 0.5364 | 0.5443 | 0.5521 | 0.5600 | 0.5679 | 0.5758 | 0.5837 | 0.5916 |
| 87 | 0.4768 | 0.4846 | 0.4924 | 0.5002 | 0.5080 | 0.5158 | 0.5236 | 0.5315 | 0.5393 | 0.5471 | 0.5549 | 0.5627 | 0.5705 | 0.5784 | 0.5862 |
| 88 | 0.4724 | 0.4802 | 0.4879 | 0.4957 | 0.5034 | 0.5112 | 0.5189 | 0.5267 | 0.5344 | 0.5422 | 0.5499 | 0.5576 | 0.5654 | 0.5731 | 0.5809 |
| 89 | 0.4682 | 0.4759 | 0.4836 | 0.4913 | 0.4989 | 0.5066 | 0.5143 | 0.5220 | 0.5296 | 0.5373 | 0.5450 | 0.5527 | 0.5603 | 0.5680 | 0.5757 |
| 90 | 0.4641 | 0.4717 | 0.4793 | 0.4869 | 0.4945 | 0.5021 | 0.5097 | 0.5173 | 0.5249 | 0.5326 | 0.5402 | 0.5478 | 0.5554 | 0.5630 | 0.5706 |
| 91 | 0.4600 | 0.4676 | 0.4751 | 0.4826 | 0.4902 | 0.4977 | 0.5053 | 0.5128 | 0.5203 | 0.5279 | 0.5354 | 0.5430 | 0.5505 | 0.5581 | 0.5656 |
| 92 | 0.4560 | 0.4635 | 0.4710 | 0.4785 | 0.4859 | 0.4934 | 0.5009 | 0.5084 | 0.5158 | 0.5233 | 0.5308 | 0.5383 | 0.5457 | 0.5532 | 0.5607 |
| 93 | 0.4521 | 0.4595 | 0.4669 | 0.4744 | 0.4818 | 0.4892 | 0.4966 | 0.5040 | 0.5114 | 0.5188 | 0.5262 | 0.5337 | 0.5411 | 0.5485 | 0.5559 |
| 94 | 0.4483 | 0.4556 | 0.4630 | 0.4703 | 0.4777 | 0.4850 | 0.4924 | 0.4997 | 0.5071 | 0.5144 | 0.5218 | 0.5291 | 0.5365 | 0.5438 | 0.5512 |
| 95 | 0.4445 | 0.4518 | 0.4591 | 0.4664 | 0.4737 | 0.4810 | 0.4882 | 0.4955 | 0.5028 | 0.5101 | 0.5174 | 0.5247 | 0.5320 | 0.5392 | 0.5465 |
| 96 | 0.4408 | 0.4480 | 0.4553 | 0.4625 | 0.4697 | 0.4769 | 0.4842 | 0.4914 | 0.4986 | 0.5059 | 0.5131 | 0.5203 | 0.5275 | 0.5348 | 0.5420 |
| 97 | 0.4372 | 0.4444 | 0.4515 | 0.4587 | 0.4659 | 0.4730 | 0.4802 | 0.4874 | 0.4945 | 0.5017 | 0.5089 | 0.5160 | 0.5232 | 0.5304 | 0.5375 |
| 98 | 0.4336 | 0.4407 | 0.4478 | 0.4549 | 0.4621 | 0.4692 | 0.4763 | 0.4834 | 0.4905 | 0.4976 | 0.5047 | 0.5118 | 0.5189 | 0.5260 | 0.5331 |
| 99 | 0.4301 | 0.4372 | 0.4442 | 0.4513 | 0.4583 | 0.4654 | 0.4724 | 0.4795 | 0.4865 | 0.4936 | 0.5006 | 0.5077 | 0.5147 | 0.5218 | 0.5288 |
| 100 | 0.4267 | 0.4337 | 0.4407 | 0.4477 | 0.4546 | 0.4616 | 0.4686 | 0.4756 | 0.4826 | 0.4896 | 0.4966 | 0.5036 | 0.5106 | 0.5176 | 0.5246 |
| E(MeV) | Os | Ir | Pt | Au | Hg | Tl | Pb | Bi | Po | At | Rn | Fr | Ra | Ac | Th |
| 1 | 7.5911 | 7.6910 | 7.7909 | 7.8908 | 7.9906 | 8.0905 | 8.1904 | 8.2903 | 8.3902 | 8.4901 | 8.5899 | 8.6898 | 8.7897 | 8.8896 | 8.9895 |
| 2 | 6.3457 | 6.4292 | 6.5127 | 6.5962 | 6.6797 | 6.7632 | 6.8467 | 6.9302 | 7.0137 | 7.0972 | 7.1807 | 7.2642 | 7.3477 | 7.4312 | 7.5147 |
| 3 | 5.4270 | 5.4984 | 5.5698 | 5.6412 | 5.7127 | 5.7841 | 5.8555 | 5.9269 | 5.9983 | 6.0697 | 6.1411 | 6.2125 | 6.2839 | 6.3553 | 6.4267 |
| 4 | 4.7577 | 4.8203 | 4.8829 | 4.9455 | 5.0081 | 5.0707 | 5.1333 | 5.1959 | 5.2585 | 5.3211 | 5.3837 | 5.4463 | 5.5089 | 5.5715 | 5.6341 |
| 5 | 4.2504 | 4.3063 | 4.3622 | 4.4182 | 4.4741 | 4.5300 | 4.5859 | 4.6419 | 4.6978 | 4.7537 | 4.8096 | 4.8655 | 4.9215 | 4.9774 | 5.0334 |
| 6 | 3.8519 | 3.9026 | 3.9533 | 4.0040 | 4.0546 | 4.1053 | 4.1560 | 4.2067 | 4.2574 | 4.3081 | 4.3588 | 4.4094 | 4.4601 | 4.5108 | 4.5615 |
| 7 | 3.5298 | 3.5762 | 3.6227 | 3.6691 | 3.7156 | 3.7620 | 3.8085 | 3.8549 | 3.9013 | 3.9478 | 3.9942 | 4.0407 | 4.0871 | 4.1336 | 4.1800 |
| 8 | 3.2634 | 3.3063 | 3.3492 | 3.3922 | 3.4351 | 3.4781 | 3.5210 | 3.5639 | 3.6069 | 3.6498 | 3.6928 | 3.7357 | 3.7786 | 3.8216 | 3.8645 |
| 9 | 3.0389 | 3.0788 | 3.1188 | 3.1588 | 3.1988 | 3.2388 | 3.2788 | 3.3188 | 3.3587 | 3.3987 | 3.4387 | 3.4787 | 3.5187 | 3.5587 | 3.5986 |
| 10 | 2.8468 | 2.8842 | 2.9217 | 2.9591 | 2.9966 | 3.0340 | 3.0715 | 3.1090 | 3.1464 | 3.1839 | 3.2213 | 3.2588 | 3.2962 | 3.3337 | 3.3712 |

TABLE 2. Compton energy absorption cross sections (b/atom) in the energy region 1–100 MeV—Continued

| E(MeV) | Os | Ir | Pt | Au | Hg | Tl | Pb | Bi | Po | At | Rn | Fr | Ra | Ac | Th |
|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 11 | 2.6803 | 2.7155 | 2.7508 | 2.7861 | 2.8213 | 2.8566 | 2.8919 | 2.9271 | 2.9624 | 2.9977 | 3.0329 | 3.0682 | 3.1035 | 3.1387 | 3.1740 |
| 12 | 2.5344 | 2.5677 | 2.6011 | 2.6344 | 2.6678 | 2.7011 | 2.7345 | 2.7678 | 2.8012 | 2.8345 | 2.8679 | 2.9012 | 2.9345 | 2.9679 | 3.0012 |
| 13 | 2.4054 | 2.4370 | 2.4687 | 2.5003 | 2.5320 | 2.5636 | 2.5953 | 2.6269 | 2.6586 | 2.6902 | 2.7219 | 2.7535 | 2.7852 | 2.8168 | 2.8485 |
| 14 | 2.2903 | 2.3205 | 2.3506 | 2.3808 | 2.4109 | 2.4410 | 2.4712 | 2.5013 | 2.5314 | 2.5616 | 2.5917 | 2.6218 | 2.6520 | 2.6821 | 2.7123 |
| 15 | 2.1871 | 2.2158 | 2.2446 | 2.2734 | 2.3022 | 2.3310 | 2.3597 | 2.3885 | 2.4173 | 2.4461 | 2.4748 | 2.5036 | 2.5324 | 2.5612 | 2.5899 |
| 16 | 2.0937 | 2.1213 | 2.1488 | 2.1764 | 2.2039 | 2.2315 | 2.2590 | 2.2866 | 2.3141 | 2.3417 | 2.3692 | 2.3968 | 2.4243 | 2.4519 | 2.4794 |
| 17 | 2.0090 | 2.0354 | 2.0618 | 2.0883 | 2.1147 | 2.1411 | 2.1676 | 2.1940 | 2.2204 | 2.2469 | 2.2733 | 2.2997 | 2.3262 | 2.3526 | 2.3790 |
| 18 | 1.9315 | 1.9570 | 1.9824 | 2.0078 | 2.0332 | 2.0586 | 2.0840 | 2.1094 | 2.1349 | 2.1603 | 2.1857 | 2.2111 | 2.2365 | 2.2619 | 2.2874 |
| 19 | 1.8605 | 1.8850 | 1.9095 | 1.9340 | 1.9585 | 1.9829 | 2.0074 | 2.0319 | 2.0564 | 2.0809 | 2.1053 | 2.1298 | 2.1543 | 2.1788 | 2.2033 |
| 20 | 1.7951 | 1.8188 | 1.8424 | 1.8660 | 1.8896 | 1.9132 | 1.9369 | 1.9605 | 1.9841 | 2.0077 | 2.0313 | 2.0550 | 2.0786 | 2.1022 | 2.1258 |
| 21 | 1.7347 | 1.7575 | 1.7803 | 1.8032 | 1.8260 | 1.8488 | 1.8716 | 1.8945 | 1.9173 | 1.9401 | 1.9629 | 1.9858 | 2.0086 | 2.0314 | 2.0542 |
| 22 | 1.6786 | 1.7007 | 1.7228 | 1.7449 | 1.7670 | 1.7891 | 1.8112 | 1.8332 | 1.8553 | 1.8774 | 1.8995 | 1.9216 | 1.9437 | 1.9658 | 1.9879 |
| 23 | 1.6265 | 1.6479 | 1.6693 | 1.6907 | 1.7121 | 1.7335 | 1.7549 | 1.7763 | 1.7977 | 1.8191 | 1.8405 | 1.8619 | 1.8833 | 1.9047 | 1.9261 |
| 24 | 1.5778 | 1.5986 | 1.6193 | 1.6401 | 1.6609 | 1.6816 | 1.7024 | 1.7231 | 1.7439 | 1.7647 | 1.7854 | 1.8062 | 1.8269 | 1.8477 | 1.8685 |
| 25 | 1.5323 | 1.5525 | 1.5726 | 1.5928 | 1.6129 | 1.6331 | 1.6533 | 1.6734 | 1.6936 | 1.7138 | 1.7339 | 1.7541 | 1.7742 | 1.7944 | 1.8146 |
| 26 | 1.4896 | 1.5092 | 1.5288 | 1.5484 | 1.5680 | 1.5876 | 1.6072 | 1.6268 | 1.6464 | 1.6660 | 1.6856 | 1.7052 | 1.7248 | 1.7444 | 1.7640 |
| 27 | 1.4495 | 1.4686 | 1.4877 | 1.5067 | 1.5258 | 1.5449 | 1.5639 | 1.5830 | 1.6021 | 1.6212 | 1.6402 | 1.6593 | 1.6784 | 1.6975 | 1.7165 |
| 28 | 1.4117 | 1.4303 | 1.4489 | 1.4675 | 1.4860 | 1.5046 | 1.5232 | 1.5418 | 1.5603 | 1.5789 | 1.5975 | 1.6161 | 1.6346 | 1.6532 | 1.6718 |
| 29 | 1.3761 | 1.3942 | 1.4123 | 1.4304 | 1.4485 | 1.4666 | 1.4847 | 1.5028 | 1.5209 | 1.5390 | 1.5571 | 1.5753 | 1.5934 | 1.6115 | 1.6296 |
| 30 | 1.3424 | 1.3600 | 1.3777 | 1.3954 | 1.4130 | 1.4307 | 1.4484 | 1.4660 | 1.4837 | 1.5014 | 1.5190 | 1.5367 | 1.5543 | 1.5720 | 1.5897 |
| 31 | 1.3105 | 1.3277 | 1.3450 | 1.3622 | 1.3794 | 1.3967 | 1.4139 | 1.4312 | 1.4484 | 1.4657 | 1.4829 | 1.5001 | 1.5174 | 1.5346 | 1.5519 |
| 32 | 1.2802 | 1.2970 | 1.3139 | 1.3307 | 1.3476 | 1.3644 | 1.3813 | 1.3981 | 1.4150 | 1.4318 | 1.4486 | 1.4655 | 1.4823 | 1.4992 | 1.5160 |
| 33 | 1.2514 | 1.2679 | 1.2844 | 1.3008 | 1.3173 | 1.3338 | 1.3502 | 1.3667 | 1.3832 | 1.3996 | 1.4161 | 1.4326 | 1.4490 | 1.4655 | 1.4820 |
| 34 | 1.2241 | 1.2402 | 1.2563 | 1.2724 | 1.2885 | 1.3046 | 1.3207 | 1.3368 | 1.3529 | 1.3690 | 1.3851 | 1.4012 | 1.4174 | 1.4335 | 1.4496 |
| 35 | 1.1980 | 1.2138 | 1.2295 | 1.2453 | 1.2611 | 1.2768 | 1.2926 | 1.3084 | 1.3241 | 1.3399 | 1.3556 | 1.3714 | 1.3872 | 1.4029 | 1.4187 |
| 36 | 1.1731 | 1.1886 | 1.2040 | 1.2195 | 1.2349 | 1.2503 | 1.2658 | 1.2812 | 1.2966 | 1.3121 | 1.3275 | 1.3429 | 1.3584 | 1.3738 | 1.3893 |
| 37 | 1.1494 | 1.1645 | 1.1797 | 1.1948 | 1.2099 | 1.2250 | 1.2401 | 1.2553 | 1.2704 | 1.2855 | 1.3006 | 1.3158 | 1.3309 | 1.3460 | 1.3611 |
| 38 | 1.1267 | 1.1415 | 1.1563 | 1.1712 | 1.1860 | 1.2008 | 1.2156 | 1.2305 | 1.2453 | 1.2601 | 1.2749 | 1.2898 | 1.3046 | 1.3194 | 1.3342 |
| 39 | 1.1050 | 1.1195 | 1.1340 | 1.1486 | 1.1631 | 1.1777 | 1.1922 | 1.2067 | 1.2213 | 1.2358 | 1.2504 | 1.2649 | 1.2794 | 1.2940 | 1.3085 |
| 40 | 1.0841 | 1.0984 | 1.1127 | 1.1269 | 1.1412 | 1.1555 | 1.1697 | 1.1840 | 1.1983 | 1.2125 | 1.2268 | 1.2411 | 1.2553 | 1.2696 | 1.2839 |
| 41 | 1.0642 | 1.0782 | 1.0922 | 1.1062 | 1.1202 | 1.1342 | 1.1482 | 1.1622 | 1.1762 | 1.1902 | 1.2042 | 1.2182 | 1.2322 | 1.2462 | 1.2602 |
| 42 | 1.0450 | 1.0587 | 1.0725 | 1.0862 | 1.1000 | 1.1137 | 1.1275 | 1.1412 | 1.1550 | 1.1687 | 1.1825 | 1.1962 | 1.2100 | 1.2237 | 1.2375 |
| 43 | 1.0266 | 1.0401 | 1.0536 | 1.0671 | 1.0806 | 1.0941 | 1.1076 | 1.1211 | 1.1346 | 1.1481 | 1.1616 | 1.1751 | 1.1887 | 1.2022 | 1.2157 |
| 44 | 1.0088 | 1.0221 | 1.0354 | 1.0487 | 1.0619 | 1.0752 | 1.0885 | 1.1018 | 1.1150 | 1.1283 | 1.1416 | 1.1549 | 1.1681 | 1.1814 | 1.1947 |
| 45 | 0.9918 | 1.0048 | 1.0179 | 1.0309 | 1.0440 | 1.0570 | 1.0701 | 1.0831 | 1.0962 | 1.1092 | 1.1223 | 1.1353 | 1.1484 | 1.1614 | 1.1745 |
| 46 | 0.9753 | 0.9882 | 1.0010 | 1.0138 | 1.0267 | 1.0395 | 1.0523 | 1.0652 | 1.0780 | 1.0908 | 1.1037 | 1.1165 | 1.1294 | 1.1422 | 1.1550 |
| 47 | 0.9595 | 0.9721 | 0.9848 | 0.9974 | 1.0100 | 1.0226 | 1.0353 | 1.0479 | 1.0605 | 1.0731 | 1.0858 | 1.0984 | 1.1110 | 1.1236 | 1.1363 |
| 48 | 0.9442 | 0.9566 | 0.9691 | 0.9815 | 0.9939 | 1.0063 | 1.0188 | 1.0312 | 1.0436 | 1.0560 | 1.0685 | 1.0809 | 1.0933 | 1.1057 | 1.1182 |
| 49 | 0.9295 | 0.9417 | 0.9539 | 0.9661 | 0.9784 | 0.9906 | 1.0028 | 1.0151 | 1.0273 | 1.0395 | 1.0518 | 1.0640 | 1.0762 | 1.0884 | 1.1007 |
| 50 | 0.9152 | 0.9272 | 0.9393 | 0.9513 | 0.9634 | 0.9754 | 0.9875 | 0.9995 | 1.0115 | 1.0236 | 1.0356 | 1.0477 | 1.0597 | 1.0717 | 1.0838 |
| 51 | 0.9014 | 0.9133 | 0.9251 | 0.9370 | 0.9489 | 0.9607 | 0.9726 | 0.9844 | 0.9963 | 1.0082 | 1.0200 | 1.0319 | 1.0437 | 1.0556 | 1.0675 |
| 52 | 0.8881 | 0.8998 | 0.9115 | 0.9231 | 0.9348 | 0.9465 | 0.9582 | 0.9699 | 0.9816 | 0.9932 | 1.0049 | 1.0166 | 1.0283 | 1.0400 | 1.0517 |
| 53 | 0.8752 | 0.8867 | 0.8982 | 0.9097 | 0.9212 | 0.9328 | 0.9443 | 0.9558 | 0.9673 | 0.9788 | 0.9903 | 1.0018 | 1.0134 | 1.0249 | 1.0364 |
| 54 | 0.8627 | 0.8740 | 0.8854 | 0.8967 | 0.9081 | 0.9194 | 0.9308 | 0.9421 | 0.9535 | 0.9648 | 0.9762 | 0.9875 | 0.9989 | 1.0102 | 1.0216 |
| 55 | 0.8506 | 0.8618 | 0.8729 | 0.8841 | 0.8953 | 0.9065 | 0.9177 | 0.9289 | 0.9401 | 0.9513 | 0.9625 | 0.9737 | 0.9849 | 0.9961 | 1.0072 |
| 56 | 0.8388 | 0.8499 | 0.8609 | 0.8719 | 0.8830 | 0.8940 | 0.9050 | 0.9161 | 0.9271 | 0.9382 | 0.9492 | 0.9602 | 0.9713 | 0.9823 | 0.9933 |
| 57 | 0.8274 | 0.8383 | 0.8492 | 0.8601 | 0.8710 | 0.8819 | 0.8927 | 0.9036 | 0.9145 | 0.9254 | 0.9363 | 0.9472 | 0.9581 | 0.9690 | 0.9798 |
| 58 | 0.8164 | 0.8271 | 0.8379 | 0.8486 | 0.8593 | 0.8701 | 0.8808 | 0.8916 | 0.9023 | 0.9130 | 0.9238 | 0.9345 | 0.9453 | 0.9560 | 0.9668 |
| 59 | 0.8056 | 0.8162 | 0.8268 | 0.8374 | 0.8480 | 0.8586 | 0.8692 | 0.8798 | 0.8904 | 0.9010 | 0.9116 | 0.9222 | 0.9328 | 0.9434 | 0.9540 |
| 60 | 0.7952 | 0.8057 | 0.8161 | 0.8266 | 0.8371 | 0.8475 | 0.8580 | 0.8684 | 0.8789 | 0.8894 | 0.8998 | 0.9103 | 0.9208 | 0.9312 | 0.9417 |
| 61 | 0.7851 | 0.7954 | 0.8057 | 0.8161 | 0.8264 | 0.8367 | 0.8470 | 0.8574 | 0.8677 | 0.8780 | 0.8884 | 0.8987 | 0.9090 | 0.9193 | 0.9297 |
| 62 | 0.7752 | 0.7854 | 0.7956 | 0.8058 | 0.8160 | 0.8262 | 0.8364 | 0.8466 | 0.8568 | 0.8670 | 0.8772 | 0.8874 | 0.8976 | 0.9078 | 0.9180 |
| 63 | 0.7656 | 0.7757 | 0.7858 | 0.7958 | 0.8059 | 0.8160 | 0.8261 | 0.8361 | 0.8462 | 0.8563 | 0.8664 | 0.8764 | 0.8865 | 0.8966 | 0.9066 |
| 64 | 0.7563 | 0.7662 | 0.7762 | 0.7861 | 0.7961 | 0.8060 | 0.8160 | 0.8259 | 0.8359 | 0.8458 | 0.8558 | 0.8657 | 0.8757 | 0.8856 | 0.8956 |
| 65 | 0.7472 | 0.7570 | 0.7669 | 0.7767 | 0.7865 | 0.7964 | 0.8062 | 0.8160 | 0.8258 | 0.8357 | 0.8455 | 0.8553 | 0.8652 | 0.8750 | 0.8848 |
| 66 | 0.7383 | 0.7481 | 0.7578 | 0.7675 | 0.7772 | 0.7869 | 0.7966 | 0.8063 | 0.8161 | 0.8258 | 0.8355 | 0.8452 | 0.8549 | 0.8646 | 0.8744 |
| 67 | 0.7297 | 0.7393 | 0.7489 | 0.7585 | 0.7681 | 0.7777 | 0.7873 | 0.7969 | 0.8065 | 0.8161 | 0.8257 | 0.8353 | 0.8449 | 0.8545 | 0.8641 |
| 68 | 0.7213 | 0.7308 | 0.7403 | 0.7498 | 0.7593 | 0.7688 | 0.7783 | 0.7878 | 0.7972 | 0.8067 | 0.8162 | 0.8257 | 0.8352 | 0.8447 | 0.8542 |
| 69 | 0.7131 | 0.7225 | 0.7319 | 0.7413 | 0.7507 | 0.7600 | 0.7694 | 0.7788 | 0.7882 | 0.7976 | 0.8070 | 0.8163 | 0.8257 | 0.8351 | 0.8445 |
| 70 | 0.7051 | 0.7144 | 0.7237 | 0.7330 | 0.7422 | 0.7515 | 0.7608 | 0.7701 | 0.7794 | 0.7886 | 0.7979 | 0.8072 | 0.8165 | 0.8257 | 0.8350 |
| 71 | 0.6973 | 0.7065 | 0.7157 | 0.7249 | 0.7340 | 0.7432 | 0.7524 | 0.7616 | 0.7707 | 0.7799 | 0.7891 | 0.7983 | 0.8074 | 0.8166 | 0.8258 |
| 72 | 0.6897 | 0.6988 | 0.7079 | 0.7169 | 0.7260 | 0.7351 | 0.7442 | 0.7532 | 0.7623 | 0.7714 | 0.7805 | 0.7895 | 0.7986 | 0.8077 | 0.8168 |
| 73 | 0.6823 | 0.6913 | 0.7002 | 0.7092 | 0.7182 | 0.7272 | 0.7362 | 0.7451 | 0.7541 | 0.7631 | 0.7721 | 0.7810 | 0.7900 | 0.7990 | 0.8080 |
| 74 | 0.6750 | 0.6839 | 0.6928 | 0.7017 | 0.7106 | 0.7194 | 0.7283 | 0.7372 | 0.7461 | 0.7550 | 0.7638 | 0.7727 | 0.7816 | 0.7905 | 0.7994 |
| 75 | 0.6679 | 0.6767 | 0.6855 | 0.6943 | 0.7031 | 0.7119 | 0.7207 | 0.7295 | 0.7382 | 0.7470 | 0.7558 | 0.7646 | 0.7734 | 0.7822 | 0.7910 |

TABLE 2. Compton energy absorption cross sections (b/atom) in the energy region 1–100 MeV—Continued

| <i>E</i> (MeV) | Os | Ir | Pt | Au | Hg | Tl | Pb | Bi | Po | At | Rn | Fr | Ra | Ac | Th |
|----------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 76 | 0.6610 | 0.6697 | 0.6784 | 0.6871 | 0.6958 | 0.7045 | 0.7132 | 0.7219 | 0.7306 | 0.7393 | 0.7480 | 0.7567 | 0.7654 | 0.7741 | 0.7828 |
| 77 | 0.6542 | 0.6628 | 0.6714 | 0.6801 | 0.6887 | 0.6973 | 0.7059 | 0.7145 | 0.7231 | 0.7317 | 0.7403 | 0.7489 | 0.7575 | 0.7661 | 0.7747 |
| 78 | 0.6476 | 0.6561 | 0.6647 | 0.6732 | 0.6817 | 0.6902 | 0.6987 | 0.7073 | 0.7158 | 0.7243 | 0.7328 | 0.7413 | 0.7499 | 0.7584 | 0.7669 |
| 79 | 0.6411 | 0.6496 | 0.6580 | 0.6664 | 0.6749 | 0.6833 | 0.6917 | 0.7002 | 0.7086 | 0.7171 | 0.7255 | 0.7339 | 0.7424 | 0.7508 | 0.7592 |
| 80 | 0.6348 | 0.6431 | 0.6515 | 0.6599 | 0.6682 | 0.6766 | 0.6849 | 0.6933 | 0.7016 | 0.7100 | 0.7183 | 0.7267 | 0.7350 | 0.7434 | 0.7517 |
| 81 | 0.6286 | 0.6369 | 0.6451 | 0.6534 | 0.6617 | 0.6699 | 0.6782 | 0.6865 | 0.6948 | 0.7030 | 0.7113 | 0.7196 | 0.7278 | 0.7361 | 0.7444 |
| 82 | 0.6225 | 0.6307 | 0.6389 | 0.6471 | 0.6553 | 0.6635 | 0.6717 | 0.6799 | 0.6880 | 0.6962 | 0.7044 | 0.7126 | 0.7208 | 0.7290 | 0.7372 |
| 83 | 0.6166 | 0.6247 | 0.6328 | 0.6409 | 0.6490 | 0.6571 | 0.6653 | 0.6734 | 0.6815 | 0.6896 | 0.6977 | 0.7058 | 0.7139 | 0.7220 | 0.7302 |
| 84 | 0.6108 | 0.6188 | 0.6268 | 0.6349 | 0.6429 | 0.6509 | 0.6590 | 0.6670 | 0.6750 | 0.6831 | 0.6911 | 0.6992 | 0.7072 | 0.7152 | 0.7233 |
| 85 | 0.6051 | 0.6130 | 0.6210 | 0.6289 | 0.6369 | 0.6449 | 0.6528 | 0.6608 | 0.6687 | 0.6767 | 0.6847 | 0.6926 | 0.7006 | 0.7085 | 0.7165 |
| 86 | 0.5995 | 0.6074 | 0.6152 | 0.6231 | 0.6310 | 0.6389 | 0.6468 | 0.6547 | 0.6626 | 0.6705 | 0.6783 | 0.6862 | 0.6941 | 0.7020 | 0.7099 |
| 87 | 0.5940 | 0.6018 | 0.6096 | 0.6174 | 0.6253 | 0.6331 | 0.6409 | 0.6487 | 0.6565 | 0.6643 | 0.6721 | 0.6800 | 0.6878 | 0.6956 | 0.7034 |
| 88 | 0.5886 | 0.5964 | 0.6041 | 0.6119 | 0.6196 | 0.6273 | 0.6351 | 0.6428 | 0.6506 | 0.6583 | 0.6661 | 0.6738 | 0.6816 | 0.6893 | 0.6971 |
| 89 | 0.5834 | 0.5910 | 0.5987 | 0.6064 | 0.6141 | 0.6217 | 0.6294 | 0.6371 | 0.6448 | 0.6524 | 0.6601 | 0.6678 | 0.6755 | 0.6831 | 0.6908 |
| 90 | 0.5782 | 0.5858 | 0.5934 | 0.6010 | 0.6086 | 0.6162 | 0.6238 | 0.6315 | 0.6391 | 0.6467 | 0.6543 | 0.6619 | 0.6695 | 0.6771 | 0.6847 |
| 91 | 0.5731 | 0.5807 | 0.5882 | 0.5958 | 0.6033 | 0.6108 | 0.6184 | 0.6259 | 0.6335 | 0.6410 | 0.6486 | 0.6561 | 0.6636 | 0.6712 | 0.6787 |
| 92 | 0.5682 | 0.5756 | 0.5831 | 0.5906 | 0.5981 | 0.6056 | 0.6130 | 0.6205 | 0.6280 | 0.6355 | 0.6429 | 0.6504 | 0.6579 | 0.6654 | 0.6728 |
| 93 | 0.5633 | 0.5707 | 0.5781 | 0.5855 | 0.5929 | 0.6004 | 0.6078 | 0.6152 | 0.6226 | 0.6300 | 0.6374 | 0.6448 | 0.6522 | 0.6597 | 0.6671 |
| 94 | 0.5585 | 0.5659 | 0.5732 | 0.5806 | 0.5879 | 0.5953 | 0.6026 | 0.6100 | 0.6173 | 0.6247 | 0.6320 | 0.6394 | 0.6467 | 0.6541 | 0.6614 |
| 95 | 0.5538 | 0.5611 | 0.5684 | 0.5757 | 0.5830 | 0.5903 | 0.5975 | 0.6048 | 0.6121 | 0.6194 | 0.6267 | 0.6340 | 0.6413 | 0.6486 | 0.6558 |
| 96 | 0.5492 | 0.5564 | 0.5637 | 0.5709 | 0.5781 | 0.5853 | 0.5926 | 0.5998 | 0.6070 | 0.6143 | 0.6215 | 0.6287 | 0.6359 | 0.6432 | 0.6504 |
| 97 | 0.5447 | 0.5519 | 0.5590 | 0.5662 | 0.5734 | 0.5805 | 0.5877 | 0.5949 | 0.6020 | 0.6092 | 0.6164 | 0.6235 | 0.6307 | 0.6379 | 0.6450 |
| 98 | 0.5402 | 0.5474 | 0.5545 | 0.5616 | 0.5687 | 0.5758 | 0.5829 | 0.5900 | 0.5971 | 0.6042 | 0.6113 | 0.6184 | 0.6255 | 0.6327 | 0.6398 |
| 99 | 0.5359 | 0.5429 | 0.5500 | 0.5570 | 0.5641 | 0.5711 | 0.5782 | 0.5852 | 0.5923 | 0.5993 | 0.6064 | 0.6134 | 0.6205 | 0.6275 | 0.6346 |
| 100 | 0.5316 | 0.5386 | 0.5456 | 0.5526 | 0.5596 | 0.5666 | 0.5736 | 0.5805 | 0.5875 | 0.5945 | 0.6015 | 0.6085 | 0.6155 | 0.6225 | 0.6295 |

| <i>E</i> (MeV) | Pa | U | Np | Pu | Am | Cm | Bk | Cf | Es | Fm |
|----------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 1 | 9.0893 | 9.1892 | 9.2891 | 9.3890 | 9.4889 | 9.5888 | 9.6886 | 9.7885 | 9.8884 | 9.9883 |
| 2 | 7.5982 | 7.6817 | 7.7652 | 7.8487 | 7.9322 | 8.0157 | 8.0992 | 8.1827 | 8.2662 | 8.3497 |
| 3 | 6.4981 | 6.5695 | 6.6410 | 6.7124 | 6.7838 | 6.8552 | 6.9266 | 6.9980 | 7.0694 | 7.1408 |
| 4 | 5.6967 | 5.7593 | 5.8219 | 5.8845 | 5.9471 | 6.0097 | 6.0723 | 6.1349 | 6.1975 | 6.2601 |
| 5 | 5.0893 | 5.1452 | 5.2011 | 5.2571 | 5.3130 | 5.3689 | 5.4248 | 5.4808 | 5.5367 | 5.5926 |
| 6 | 4.6121 | 4.6628 | 4.7135 | 4.7642 | 4.8149 | 4.8656 | 4.9162 | 4.9669 | 5.0176 | 5.0683 |
| 7 | 4.2265 | 4.2729 | 4.3194 | 4.3658 | 4.4122 | 4.4587 | 4.5051 | 4.5516 | 4.5980 | 4.6445 |
| 8 | 3.9075 | 3.9504 | 3.9933 | 4.0363 | 4.0792 | 4.1221 | 4.1651 | 4.2080 | 4.2510 | 4.2939 |
| 9 | 3.6386 | 3.6786 | 3.7186 | 3.7586 | 3.7986 | 3.8386 | 3.8785 | 3.9185 | 3.9585 | 3.9985 |
| 10 | 3.4086 | 3.4461 | 3.4835 | 3.5210 | 3.5584 | 3.5959 | 3.6334 | 3.6708 | 3.7083 | 3.7457 |
| 11 | 3.2093 | 3.2445 | 3.2798 | 3.3151 | 3.3503 | 3.3856 | 3.4209 | 3.4561 | 3.4914 | 3.5267 |
| 12 | 3.0346 | 3.0679 | 3.1013 | 3.1346 | 3.1680 | 3.2013 | 3.2347 | 3.2680 | 3.3014 | 3.3347 |
| 13 | 2.8801 | 2.9118 | 2.9434 | 2.9751 | 3.0067 | 3.0384 | 3.0700 | 3.1017 | 3.1333 | 3.1650 |
| 14 | 2.7424 | 2.7725 | 2.8027 | 2.8328 | 2.8629 | 2.8931 | 2.9232 | 2.9533 | 2.9835 | 3.0136 |
| 15 | 2.6187 | 2.6475 | 2.6763 | 2.7051 | 2.7338 | 2.7626 | 2.7914 | 2.8202 | 2.8489 | 2.8777 |
| 16 | 2.5070 | 2.5345 | 2.5621 | 2.5896 | 2.6172 | 2.6447 | 2.6723 | 2.6998 | 2.7274 | 2.7549 |
| 17 | 2.4055 | 2.4319 | 2.4583 | 2.4848 | 2.5112 | 2.5376 | 2.5641 | 2.5905 | 2.6169 | 2.6434 |
| 18 | 2.3128 | 2.3382 | 2.3636 | 2.3890 | 2.4144 | 2.4398 | 2.4653 | 2.4907 | 2.5161 | 2.5415 |
| 19 | 2.2277 | 2.2522 | 2.2767 | 2.3012 | 2.3257 | 2.3501 | 2.3746 | 2.3991 | 2.4236 | 2.4481 |
| 20 | 2.1494 | 2.1731 | 2.1967 | 2.2203 | 2.2439 | 2.2675 | 2.2912 | 2.3148 | 2.3384 | 2.3620 |
| 21 | 2.0771 | 2.0999 | 2.1227 | 2.1455 | 2.1684 | 2.1912 | 2.2140 | 2.2368 | 2.2597 | 2.2825 |
| 22 | 2.0099 | 2.0320 | 2.0541 | 2.0762 | 2.0983 | 2.1204 | 2.1425 | 2.1646 | 2.1866 | 2.2087 |
| 23 | 1.9475 | 1.9689 | 1.9903 | 2.0117 | 2.0331 | 2.0545 | 2.0759 | 2.0973 | 2.1187 | 2.1401 |
| 24 | 1.8892 | 1.9100 | 1.9308 | 1.9515 | 1.9723 | 1.9930 | 2.0138 | 2.0346 | 2.0553 | 2.0761 |
| 25 | 1.8347 | 1.8549 | 1.8751 | 1.8952 | 1.9154 | 1.9355 | 1.9557 | 1.9759 | 1.9960 | 2.0162 |
| 26 | 1.7836 | 1.8032 | 1.8228 | 1.8424 | 1.8620 | 1.8816 | 1.9012 | 1.9208 | 1.9404 | 1.9600 |
| 27 | 1.7356 | 1.7547 | 1.7737 | 1.7928 | 1.8119 | 1.8310 | 1.8500 | 1.8691 | 1.8882 | 1.9073 |
| 28 | 1.6904 | 1.7089 | 1.7275 | 1.7461 | 1.7647 | 1.7832 | 1.8018 | 1.8204 | 1.8390 | 1.8575 |
| 29 | 1.6477 | 1.6658 | 1.6839 | 1.7020 | 1.7201 | 1.7382 | 1.7563 | 1.7744 | 1.7925 | 1.8106 |
| 30 | 1.6073 | 1.6250 | 1.6427 | 1.6603 | 1.6780 | 1.6956 | 1.7133 | 1.7310 | 1.7486 | 1.7663 |
| 31 | 1.5691 | 1.5864 | 1.6036 | 1.6208 | 1.6381 | 1.6553 | 1.6726 | 1.6898 | 1.7071 | 1.7243 |
| 32 | 1.5329 | 1.5497 | 1.5666 | 1.5834 | 1.6002 | 1.6171 | 1.6339 | 1.6508 | 1.6676 | 1.6845 |
| 33 | 1.4984 | 1.5149 | 1.5314 | 1.5478 | 1.5643 | 1.5808 | 1.5972 | 1.6137 | 1.6302 | 1.6466 |
| 34 | 1.4657 | 1.4818 | 1.4979 | 1.5140 | 1.5301 | 1.5462 | 1.5623 | 1.5784 | 1.5945 | 1.6106 |
| 35 | 1.4345 | 1.4502 | 1.4660 | 1.4818 | 1.4975 | 1.5133 | 1.5290 | 1.5448 | 1.5606 | 1.5763 |
| 36 | 1.4047 | 1.4201 | 1.4356 | 1.4510 | 1.4664 | 1.4819 | 1.4973 | 1.5127 | 1.5282 | 1.5436 |
| 37 | 1.3763 | 1.3914 | 1.4065 | 1.4216 | 1.4368 | 1.4519 | 1.4670 | 1.4821 | 1.4972 | 1.5124 |

TABLE 2. Compton energy absorption cross sections (b/atom) in the energy region 1–100 MeV—Continued

| <i>E</i> (MeV) | Pa | U | Np | Pu | Am | Cm | Bk | Cf | Es | Fm |
|----------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 38 | 1.3491 | 1.3639 | 1.3787 | 1.3935 | 1.4084 | 1.4232 | 1.4380 | 1.4528 | 1.4677 | 1.4825 |
| 39 | 1.3231 | 1.3376 | 1.3521 | 1.3667 | 1.3812 | 1.3957 | 1.4103 | 1.4248 | 1.4394 | 1.4539 |
| 40 | 1.2981 | 1.3124 | 1.3266 | 1.3409 | 1.3552 | 1.3694 | 1.3837 | 1.3980 | 1.4122 | 1.4265 |
| 41 | 1.2742 | 1.2882 | 1.3022 | 1.3162 | 1.3302 | 1.3442 | 1.3582 | 1.3722 | 1.3862 | 1.4002 |
| 42 | 1.2512 | 1.2650 | 1.2787 | 1.2925 | 1.3062 | 1.3200 | 1.3337 | 1.3475 | 1.3612 | 1.3750 |
| 43 | 1.2292 | 1.2427 | 1.2562 | 1.2697 | 1.2832 | 1.2967 | 1.3102 | 1.3237 | 1.3372 | 1.3507 |
| 44 | 1.2080 | 1.2212 | 1.2345 | 1.2478 | 1.2611 | 1.2743 | 1.2876 | 1.3009 | 1.3141 | 1.3274 |
| 45 | 1.1875 | 1.2006 | 1.2136 | 1.2267 | 1.2397 | 1.2528 | 1.2658 | 1.2789 | 1.2919 | 1.3050 |
| 46 | 1.1679 | 1.1807 | 1.1935 | 1.2064 | 1.2192 | 1.2320 | 1.2449 | 1.2577 | 1.2705 | 1.2834 |
| 47 | 1.1489 | 1.1615 | 1.1741 | 1.1868 | 1.1994 | 1.2120 | 1.2246 | 1.2373 | 1.2499 | 1.2625 |
| 48 | 1.1306 | 1.1430 | 1.1554 | 1.1678 | 1.1803 | 1.1927 | 1.2051 | 1.2175 | 1.2300 | 1.2424 |
| 49 | 1.1129 | 1.1251 | 1.1374 | 1.1496 | 1.1618 | 1.1741 | 1.1863 | 1.1985 | 1.2107 | 1.2230 |
| 50 | 1.0958 | 1.1079 | 1.1199 | 1.1320 | 1.1440 | 1.1560 | 1.1681 | 1.1801 | 1.1922 | 1.2042 |
| 51 | 1.0793 | 1.0912 | 1.1030 | 1.1149 | 1.1268 | 1.1386 | 1.1505 | 1.1624 | 1.1742 | 1.1861 |
| 52 | 1.0634 | 1.0750 | 1.0867 | 1.0984 | 1.1101 | 1.1218 | 1.1335 | 1.1452 | 1.1568 | 1.1685 |
| 53 | 1.0479 | 1.0594 | 1.0709 | 1.0825 | 1.0940 | 1.1055 | 1.1170 | 1.1285 | 1.1400 | 1.1515 |
| 54 | 1.0329 | 1.0443 | 1.0556 | 1.0670 | 1.0783 | 1.0897 | 1.1010 | 1.1124 | 1.1237 | 1.1351 |
| 55 | 1.0184 | 1.0296 | 1.0408 | 1.0520 | 1.0632 | 1.0744 | 1.0856 | 1.0968 | 1.1080 | 1.1192 |
| 56 | 1.0044 | 1.0154 | 1.0264 | 1.0375 | 1.0485 | 1.0596 | 1.0706 | 1.0816 | 1.0927 | 1.1037 |
| 57 | 0.9907 | 1.0016 | 1.0125 | 1.0234 | 1.0343 | 1.0452 | 1.0561 | 1.0669 | 1.0778 | 1.0887 |
| 58 | 0.9775 | 0.9882 | 0.9990 | 1.0097 | 1.0205 | 1.0312 | 1.0419 | 1.0527 | 1.0634 | 1.0742 |
| 59 | 0.9646 | 0.9752 | 0.9858 | 0.9964 | 1.0070 | 1.0176 | 1.0282 | 1.0388 | 1.0494 | 1.0600 |
| 60 | 0.9521 | 0.9626 | 0.9731 | 0.9835 | 0.9940 | 1.0045 | 1.0149 | 1.0254 | 1.0359 | 1.0463 |
| 61 | 0.9400 | 0.9503 | 0.9607 | 0.9710 | 0.9813 | 0.9917 | 1.0020 | 1.0123 | 1.0226 | 1.0330 |
| 62 | 0.9282 | 0.9384 | 0.9486 | 0.9588 | 0.9690 | 0.9792 | 0.9894 | 0.9996 | 1.0098 | 1.0200 |
| 63 | 0.9167 | 0.9268 | 0.9369 | 0.9469 | 0.9570 | 0.9671 | 0.9772 | 0.9872 | 0.9973 | 1.0074 |
| 64 | 0.9055 | 0.9155 | 0.9254 | 0.9354 | 0.9453 | 0.9553 | 0.9653 | 0.9752 | 0.9852 | 0.9951 |
| 65 | 0.8947 | 0.9045 | 0.9143 | 0.9242 | 0.9340 | 0.9438 | 0.9537 | 0.9635 | 0.9733 | 0.9831 |
| 66 | 0.8841 | 0.8938 | 0.9035 | 0.9132 | 0.9229 | 0.9326 | 0.9424 | 0.9521 | 0.9618 | 0.9715 |
| 67 | 0.8737 | 0.8833 | 0.8929 | 0.9026 | 0.9122 | 0.9218 | 0.9314 | 0.9410 | 0.9506 | 0.9602 |
| 68 | 0.8637 | 0.8732 | 0.8827 | 0.8922 | 0.9016 | 0.9111 | 0.9206 | 0.9301 | 0.9396 | 0.9491 |
| 69 | 0.8539 | 0.8633 | 0.8726 | 0.8820 | 0.8914 | 0.9008 | 0.9102 | 0.9196 | 0.9289 | 0.9383 |
| 70 | 0.8443 | 0.8536 | 0.8629 | 0.8721 | 0.8814 | 0.8907 | 0.9000 | 0.9092 | 0.9185 | 0.9278 |
| 71 | 0.8350 | 0.8441 | 0.8533 | 0.8625 | 0.8717 | 0.8808 | 0.8900 | 0.8992 | 0.9084 | 0.9175 |
| 72 | 0.8258 | 0.8349 | 0.8440 | 0.8531 | 0.8621 | 0.8712 | 0.8803 | 0.8894 | 0.8984 | 0.9075 |
| 73 | 0.8169 | 0.8259 | 0.8349 | 0.8439 | 0.8529 | 0.8618 | 0.8708 | 0.8798 | 0.8888 | 0.8977 |
| 74 | 0.8083 | 0.8171 | 0.8260 | 0.8349 | 0.8438 | 0.8527 | 0.8615 | 0.8704 | 0.8793 | 0.8882 |
| 75 | 0.7998 | 0.8086 | 0.8173 | 0.8261 | 0.8349 | 0.8437 | 0.8525 | 0.8613 | 0.8701 | 0.8789 |
| 76 | 0.7915 | 0.8002 | 0.8089 | 0.8176 | 0.8263 | 0.8350 | 0.8437 | 0.8524 | 0.8610 | 0.8697 |
| 77 | 0.7834 | 0.7920 | 0.8006 | 0.8092 | 0.8178 | 0.8264 | 0.8350 | 0.8436 | 0.8522 | 0.8608 |
| 78 | 0.7754 | 0.7839 | 0.7925 | 0.8010 | 0.8095 | 0.8180 | 0.8266 | 0.8351 | 0.8436 | 0.8521 |
| 79 | 0.7677 | 0.7761 | 0.7845 | 0.7930 | 0.8014 | 0.8098 | 0.8183 | 0.8267 | 0.8352 | 0.8436 |
| 80 | 0.7601 | 0.7684 | 0.7768 | 0.7851 | 0.7935 | 0.8018 | 0.8102 | 0.8185 | 0.8269 | 0.8353 |
| 81 | 0.7527 | 0.7609 | 0.7692 | 0.7775 | 0.7857 | 0.7940 | 0.8023 | 0.8106 | 0.8188 | 0.8271 |
| 82 | 0.7454 | 0.7536 | 0.7618 | 0.7700 | 0.7781 | 0.7863 | 0.7945 | 0.8027 | 0.8109 | 0.8191 |
| 83 | 0.7383 | 0.7464 | 0.7545 | 0.7626 | 0.7707 | 0.7788 | 0.7869 | 0.7951 | 0.8032 | 0.8113 |
| 84 | 0.7313 | 0.7393 | 0.7474 | 0.7554 | 0.7634 | 0.7715 | 0.7795 | 0.7876 | 0.7956 | 0.8036 |
| 85 | 0.7245 | 0.7324 | 0.7404 | 0.7484 | 0.7563 | 0.7643 | 0.7722 | 0.7802 | 0.7882 | 0.7961 |
| 86 | 0.7178 | 0.7257 | 0.7336 | 0.7414 | 0.7493 | 0.7572 | 0.7651 | 0.7730 | 0.7809 | 0.7888 |
| 87 | 0.7112 | 0.7190 | 0.7269 | 0.7347 | 0.7425 | 0.7503 | 0.7581 | 0.7659 | 0.7737 | 0.7816 |
| 88 | 0.7048 | 0.7125 | 0.7203 | 0.7280 | 0.7358 | 0.7435 | 0.7513 | 0.7590 | 0.7668 | 0.7745 |
| 89 | 0.6985 | 0.7062 | 0.7138 | 0.7215 | 0.7292 | 0.7369 | 0.7446 | 0.7522 | 0.7599 | 0.7676 |
| 90 | 0.6923 | 0.6999 | 0.7075 | 0.7151 | 0.7227 | 0.7304 | 0.7380 | 0.7456 | 0.7532 | 0.7608 |
| 91 | 0.6863 | 0.6938 | 0.7013 | 0.7089 | 0.7164 | 0.7240 | 0.7315 | 0.7390 | 0.7466 | 0.7541 |
| 92 | 0.6803 | 0.6878 | 0.6953 | 0.7027 | 0.7102 | 0.7177 | 0.7252 | 0.7326 | 0.7401 | 0.7476 |
| 93 | 0.6745 | 0.6819 | 0.6893 | 0.6967 | 0.7041 | 0.7115 | 0.7189 | 0.7264 | 0.7338 | 0.7412 |
| 94 | 0.6688 | 0.6761 | 0.6834 | 0.6908 | 0.6981 | 0.7055 | 0.7128 | 0.7202 | 0.7275 | 0.7349 |
| 95 | 0.6631 | 0.6704 | 0.6777 | 0.6850 | 0.6923 | 0.6996 | 0.7069 | 0.7141 | 0.7214 | 0.7287 |
| 96 | 0.6576 | 0.6648 | 0.6721 | 0.6793 | 0.6865 | 0.6937 | 0.7010 | 0.7082 | 0.7154 | 0.7227 |
| 97 | 0.6522 | 0.6594 | 0.6665 | 0.6737 | 0.6809 | 0.6880 | 0.6952 | 0.7024 | 0.7095 | 0.7167 |
| 98 | 0.6469 | 0.6540 | 0.6611 | 0.6682 | 0.6753 | 0.6824 | 0.6895 | 0.6966 | 0.7037 | 0.7108 |
| 99 | 0.6416 | 0.6487 | 0.6557 | 0.6628 | 0.6698 | 0.6769 | 0.6839 | 0.6910 | 0.6981 | 0.7051 |
| 100 | 0.6365 | 0.6435 | 0.6505 | 0.6575 | 0.6645 | 0.6715 | 0.6785 | 0.6855 | 0.6925 | 0.6995 |

TABLE 3. Compton component of the mass-energy absorption coefficient (cm/g) in the energy region 1 keV–1 MeV

| E(keV) | H | He | Li | Be | B | C | N | O | F | Ne | Na | Mg | Al | Si | P |
|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 1 | 0.0008 | 0.0004 | 0.0004 | 0.0004 | 0.0004 | 0.0004 | 0.0004 | 0.0004 | 0.0004 | 0.0004 | 0.0004 | 0.0004 | 0.0004 | 0.0004 | 0.0004 |
| 2 | 0.0016 | 0.0008 | 0.0007 | 0.0007 | 0.0008 | 0.0008 | 0.0008 | 0.0008 | 0.0008 | 0.0008 | 0.0008 | 0.0008 | 0.0008 | 0.0008 | 0.0008 |
| 3 | 0.0024 | 0.0012 | 0.0011 | 0.0011 | 0.0011 | 0.0012 | 0.0012 | 0.0012 | 0.0012 | 0.0012 | 0.0012 | 0.0012 | 0.0012 | 0.0012 | 0.0012 |
| 4 | 0.0032 | 0.0016 | 0.0014 | 0.0014 | 0.0015 | 0.0016 | 0.0016 | 0.0016 | 0.0015 | 0.0016 | 0.0016 | 0.0016 | 0.0016 | 0.0016 | 0.0016 |
| 5 | 0.0040 | 0.0020 | 0.0017 | 0.0018 | 0.0019 | 0.0020 | 0.0020 | 0.0020 | 0.0019 | 0.0020 | 0.0019 | 0.0020 | 0.0019 | 0.0020 | 0.0020 |
| 6 | 0.0048 | 0.0024 | 0.0021 | 0.0021 | 0.0022 | 0.0024 | 0.0024 | 0.0024 | 0.0023 | 0.0024 | 0.0023 | 0.0024 | 0.0023 | 0.0024 | 0.0023 |
| 7 | 0.0055 | 0.0028 | 0.0024 | 0.0025 | 0.0026 | 0.0028 | 0.0028 | 0.0028 | 0.0026 | 0.0028 | 0.0027 | 0.0028 | 0.0027 | 0.0028 | 0.0027 |
| 8 | 0.0063 | 0.0032 | 0.0027 | 0.0028 | 0.0029 | 0.0032 | 0.0032 | 0.0032 | 0.0030 | 0.0031 | 0.0030 | 0.0031 | 0.0030 | 0.0032 | 0.0031 |
| 9 | 0.0070 | 0.0035 | 0.0031 | 0.0031 | 0.0033 | 0.0035 | 0.0035 | 0.0035 | 0.0033 | 0.0035 | 0.0034 | 0.0035 | 0.0034 | 0.0035 | 0.0034 |
| 10 | 0.0077 | 0.0039 | 0.0034 | 0.0035 | 0.0036 | 0.0039 | 0.0039 | 0.0039 | 0.0037 | 0.0039 | 0.0037 | 0.0038 | 0.0037 | 0.0039 | 0.0038 |
| 20 | 0.0143 | 0.0072 | 0.0062 | 0.0064 | 0.0067 | 0.0072 | 0.0072 | 0.0072 | 0.0068 | 0.0071 | 0.0069 | 0.0071 | 0.0069 | 0.0072 | 0.0070 |
| 30 | 0.0200 | 0.0101 | 0.0087 | 0.0089 | 0.0093 | 0.0101 | 0.0101 | 0.0101 | 0.0095 | 0.0100 | 0.0096 | 0.0099 | 0.0097 | 0.0100 | 0.0097 |
| 40 | 0.0249 | 0.0125 | 0.0108 | 0.0111 | 0.0116 | 0.0125 | 0.0125 | 0.0125 | 0.0119 | 0.0124 | 0.0120 | 0.0124 | 0.0121 | 0.0125 | 0.0121 |
| 50 | 0.0291 | 0.0147 | 0.0127 | 0.0130 | 0.0136 | 0.0147 | 0.0147 | 0.0147 | 0.0139 | 0.0145 | 0.0140 | 0.0145 | 0.0141 | 0.0146 | 0.0142 |
| 60 | 0.0328 | 0.0165 | 0.0143 | 0.0147 | 0.0153 | 0.0165 | 0.0165 | 0.0165 | 0.0157 | 0.0164 | 0.0158 | 0.0163 | 0.0159 | 0.0165 | 0.0160 |
| 70 | 0.0360 | 0.0182 | 0.0157 | 0.0161 | 0.0168 | 0.0182 | 0.0182 | 0.0182 | 0.0172 | 0.0180 | 0.0174 | 0.0179 | 0.0175 | 0.0181 | 0.0176 |
| 80 | 0.0389 | 0.0196 | 0.0170 | 0.0174 | 0.0181 | 0.0196 | 0.0196 | 0.0196 | 0.0186 | 0.0194 | 0.0188 | 0.0194 | 0.0189 | 0.0195 | 0.0190 |
| 90 | 0.0414 | 0.0209 | 0.0181 | 0.0185 | 0.0193 | 0.0209 | 0.0209 | 0.0209 | 0.0198 | 0.0207 | 0.0200 | 0.0206 | 0.0201 | 0.0208 | 0.0202 |
| 100 | 0.0437 | 0.0220 | 0.0190 | 0.0195 | 0.0204 | 0.0220 | 0.0220 | 0.0220 | 0.0208 | 0.0218 | 0.0211 | 0.0217 | 0.0212 | 0.0219 | 0.0213 |
| 110 | 0.0457 | 0.0230 | 0.0199 | 0.0204 | 0.0213 | 0.0230 | 0.0230 | 0.0230 | 0.0218 | 0.0228 | 0.0220 | 0.0227 | 0.0222 | 0.0229 | 0.0223 |
| 120 | 0.0474 | 0.0239 | 0.0207 | 0.0212 | 0.0221 | 0.0239 | 0.0239 | 0.0239 | 0.0226 | 0.0237 | 0.0229 | 0.0236 | 0.0230 | 0.0238 | 0.0231 |
| 130 | 0.0490 | 0.0247 | 0.0214 | 0.0219 | 0.0229 | 0.0247 | 0.0247 | 0.0247 | 0.0234 | 0.0245 | 0.0236 | 0.0244 | 0.0238 | 0.0246 | 0.0239 |
| 140 | 0.0504 | 0.0254 | 0.0220 | 0.0226 | 0.0235 | 0.0254 | 0.0254 | 0.0254 | 0.0241 | 0.0252 | 0.0243 | 0.0251 | 0.0245 | 0.0253 | 0.0246 |
| 150 | 0.0517 | 0.0261 | 0.0225 | 0.0231 | 0.0241 | 0.0260 | 0.0261 | 0.0261 | 0.0247 | 0.0258 | 0.0249 | 0.0257 | 0.0251 | 0.0260 | 0.0252 |
| 160 | 0.0529 | 0.0266 | 0.0230 | 0.0237 | 0.0246 | 0.0266 | 0.0266 | 0.0266 | 0.0252 | 0.0264 | 0.0255 | 0.0263 | 0.0257 | 0.0266 | 0.0258 |
| 170 | 0.0539 | 0.0272 | 0.0235 | 0.0241 | 0.0251 | 0.0271 | 0.0272 | 0.0272 | 0.0257 | 0.0269 | 0.0260 | 0.0268 | 0.0262 | 0.0271 | 0.0263 |
| 180 | 0.0548 | 0.0276 | 0.0239 | 0.0245 | 0.0256 | 0.0276 | 0.0276 | 0.0276 | 0.0262 | 0.0274 | 0.0265 | 0.0273 | 0.0266 | 0.0276 | 0.0268 |
| 190 | 0.0557 | 0.0281 | 0.0243 | 0.0249 | 0.0260 | 0.0280 | 0.0281 | 0.0281 | 0.0266 | 0.0278 | 0.0269 | 0.0277 | 0.0270 | 0.0280 | 0.0272 |
| 200 | 0.0565 | 0.0284 | 0.0246 | 0.0253 | 0.0263 | 0.0284 | 0.0284 | 0.0285 | 0.0270 | 0.0282 | 0.0272 | 0.0281 | 0.0274 | 0.0284 | 0.0276 |
| 210 | 0.0572 | 0.0288 | 0.0249 | 0.0256 | 0.0267 | 0.0288 | 0.0288 | 0.0288 | 0.0273 | 0.0286 | 0.0276 | 0.0284 | 0.0278 | 0.0287 | 0.0279 |
| 220 | 0.0578 | 0.0291 | 0.0252 | 0.0259 | 0.0269 | 0.0291 | 0.0291 | 0.0291 | 0.0276 | 0.0289 | 0.0279 | 0.0288 | 0.0281 | 0.0290 | 0.0282 |
| 230 | 0.0584 | 0.0294 | 0.0254 | 0.0261 | 0.0272 | 0.0294 | 0.0294 | 0.0294 | 0.0279 | 0.0292 | 0.0282 | 0.0290 | 0.0284 | 0.0293 | 0.0285 |
| 240 | 0.0589 | 0.0297 | 0.0257 | 0.0264 | 0.0275 | 0.0297 | 0.0297 | 0.0297 | 0.0281 | 0.0294 | 0.0284 | 0.0293 | 0.0286 | 0.0296 | 0.0287 |
| 250 | 0.0594 | 0.0299 | 0.0259 | 0.0266 | 0.0277 | 0.0299 | 0.0299 | 0.0299 | 0.0284 | 0.0297 | 0.0286 | 0.0295 | 0.0288 | 0.0298 | 0.0290 |
| 260 | 0.0598 | 0.0301 | 0.0261 | 0.0268 | 0.0279 | 0.0301 | 0.0301 | 0.0301 | 0.0286 | 0.0299 | 0.0289 | 0.0298 | 0.0291 | 0.0301 | 0.0292 |
| 270 | 0.0602 | 0.0303 | 0.0262 | 0.0269 | 0.0281 | 0.0303 | 0.0303 | 0.0303 | 0.0288 | 0.0301 | 0.0290 | 0.0300 | 0.0292 | 0.0303 | 0.0294 |
| 280 | 0.0606 | 0.0305 | 0.0264 | 0.0271 | 0.0282 | 0.0305 | 0.0305 | 0.0305 | 0.0289 | 0.0303 | 0.0292 | 0.0301 | 0.0294 | 0.0304 | 0.0296 |
| 290 | 0.0609 | 0.0307 | 0.0265 | 0.0272 | 0.0284 | 0.0307 | 0.0307 | 0.0307 | 0.0291 | 0.0304 | 0.0294 | 0.0303 | 0.0296 | 0.0306 | 0.0297 |
| 300 | 0.0612 | 0.0308 | 0.0267 | 0.0274 | 0.0285 | 0.0308 | 0.0308 | 0.0308 | 0.0292 | 0.0306 | 0.0295 | 0.0304 | 0.0297 | 0.0307 | 0.0299 |
| 310 | 0.0615 | 0.0310 | 0.0268 | 0.0275 | 0.0287 | 0.0310 | 0.0310 | 0.0310 | 0.0294 | 0.0307 | 0.0296 | 0.0306 | 0.0299 | 0.0309 | 0.0300 |
| 320 | 0.0617 | 0.0311 | 0.0269 | 0.0276 | 0.0288 | 0.0311 | 0.0311 | 0.0311 | 0.0295 | 0.0308 | 0.0298 | 0.0307 | 0.0300 | 0.0310 | 0.0301 |
| 330 | 0.0619 | 0.0312 | 0.0270 | 0.0277 | 0.0289 | 0.0312 | 0.0312 | 0.0312 | 0.0296 | 0.0309 | 0.0299 | 0.0308 | 0.0301 | 0.0311 | 0.0302 |
| 340 | 0.0621 | 0.0313 | 0.0271 | 0.0278 | 0.0290 | 0.0313 | 0.0313 | 0.0313 | 0.0297 | 0.0310 | 0.0300 | 0.0309 | 0.0302 | 0.0312 | 0.0303 |
| 350 | 0.0623 | 0.0314 | 0.0272 | 0.0279 | 0.0291 | 0.0314 | 0.0314 | 0.0314 | 0.0298 | 0.0311 | 0.0301 | 0.0310 | 0.0303 | 0.0313 | 0.0304 |
| 360 | 0.0625 | 0.0315 | 0.0272 | 0.0280 | 0.0291 | 0.0315 | 0.0315 | 0.0315 | 0.0298 | 0.0312 | 0.0301 | 0.0311 | 0.0303 | 0.0314 | 0.0305 |
| 370 | 0.0626 | 0.0315 | 0.0273 | 0.0280 | 0.0292 | 0.0315 | 0.0315 | 0.0316 | 0.0299 | 0.0313 | 0.0302 | 0.0312 | 0.0304 | 0.0315 | 0.0306 |
| 380 | 0.0627 | 0.0316 | 0.0273 | 0.0281 | 0.0293 | 0.0316 | 0.0316 | 0.0316 | 0.0300 | 0.0313 | 0.0303 | 0.0312 | 0.0305 | 0.0315 | 0.0306 |
| 390 | 0.0629 | 0.0317 | 0.0274 | 0.0281 | 0.0293 | 0.0317 | 0.0317 | 0.0317 | 0.0300 | 0.0314 | 0.0303 | 0.0313 | 0.0305 | 0.0316 | 0.0307 |
| 400 | 0.0630 | 0.0317 | 0.0274 | 0.0282 | 0.0294 | 0.0317 | 0.0317 | 0.0317 | 0.0301 | 0.0314 | 0.0304 | 0.0313 | 0.0306 | 0.0316 | 0.0307 |
| 410 | 0.0630 | 0.0318 | 0.0275 | 0.0282 | 0.0294 | 0.0317 | 0.0318 | 0.0318 | 0.0301 | 0.0315 | 0.0304 | 0.0314 | 0.0306 | 0.0317 | 0.0308 |
| 420 | 0.0631 | 0.0318 | 0.0275 | 0.0282 | 0.0294 | 0.0318 | 0.0318 | 0.0318 | 0.0301 | 0.0315 | 0.0304 | 0.0314 | 0.0307 | 0.0317 | 0.0308 |
| 430 | 0.0632 | 0.0318 | 0.0275 | 0.0283 | 0.0295 | 0.0318 | 0.0318 | 0.0318 | 0.0302 | 0.0316 | 0.0305 | 0.0314 | 0.0307 | 0.0317 | 0.0308 |
| 440 | 0.0632 | 0.0319 | 0.0276 | 0.0283 | 0.0295 | 0.0318 | 0.0319 | 0.0319 | 0.0302 | 0.0316 | 0.0305 | 0.0315 | 0.0307 | 0.0318 | 0.0309 |
| 450 | 0.0633 | 0.0319 | 0.0276 | 0.0283 | 0.0295 | 0.0319 | 0.0319 | 0.0319 | 0.0302 | 0.0316 | 0.0305 | 0.0315 | 0.0307 | 0.0318 | 0.0309 |
| 460 | 0.0633 | 0.0319 | 0.0276 | 0.0283 | 0.0295 | 0.0319 | 0.0319 | 0.0319 | 0.0302 | 0.0316 | 0.0305 | 0.0315 | 0.0308 | 0.0318 | 0.0309 |
| 470 | 0.0634 | 0.0319 | 0.0276 | 0.0283 | 0.0295 | 0.0319 | 0.0319 | 0.0319 | 0.0302 | 0.0316 | 0.0306 | 0.0315 | 0.0308 | 0.0318 | 0.0309 |
| 480 | 0.0634 | 0.0319 | 0.0276 | 0.0284 | 0.0295 | 0.0319 | 0.0319 | 0.0319 | 0.0303 | 0.0316 | 0.0306 | 0.0315 | 0.0308 | 0.0318 | 0.0309 |
| 490 | 0.0634 | 0.0319 | 0.0276 | 0.0284 | 0.0295 | 0.0319 | 0.0319 | 0.0319 | 0.0303 | 0.0317 | 0.0306 | 0.0315 | 0.0308 | 0.0318 | 0.0309 |
| 500 | 0.0634 | 0.0319 | 0.0276 | 0.0284 | 0.0296 | 0.0319 | 0.0319 | 0.0319 | 0.0303 | 0.0317 | 0.0306 | 0.0315 | 0.0308 | 0.0318 | 0.0309 |
| 510 | 0.0634 | 0.0319 | 0.0276 | 0.0284 | 0.0295 | 0.0319 | 0.0319 | 0.0319 | 0.0303 | 0.0317 | 0.0306 | 0.0315 | 0.0308 | 0.0318 | 0.0309 |
| 520 | 0.0634 | 0.0319 | 0.0276 | 0.0284 | 0.0295 | 0.0319 | 0.0319 | 0.0319 | 0.0303 | 0.0317 | 0.0306 | 0.0315 | 0.0308 | 0.0318 | 0.0309 |
| 530 | 0.0634 | 0.0319 | 0.0276 | 0.0283 | 0.0295 | 0.0319 | 0.0319 | 0.0319 | 0.0303 | 0.0316 | 0.0306 | 0.0315 | 0.0308 | 0.0318 | 0.0309 |
| 540 | 0.0633 | 0.0319 | 0.0276 | 0.0283 | 0.0295 | 0.0319 | 0.0319 | 0.0319 | 0.0302 | 0.0316 | 0.0306 | 0.0315 | 0.0308 | 0.0318 | 0.0309 |
| 550 | 0.0633 | 0.0319 | 0.0276 | 0.0283 | 0.0295 | 0.0319 | 0.0319 | 0.0319 | 0.0302 | 0.0316 | 0.0305 | 0.0315 | 0.0307 | 0.0318 | 0.0309 |
| 560 | 0.0633 | 0.0319 | 0.0276 | 0.0283 | 0.0295 | 0.0319 | 0.0319 | 0.0319 | 0.0302 | 0.0316 | 0.0305 | 0.0315 | 0.0307 | 0.0318 | 0.0309 |

TABLE 3. Compton component of the mass-energy absorption coefficient (cm/g) in the energy region 1 keV–1 MeV—Continued

| <i>E</i> (keV) | H | He | Li | Be | B | C | N | O | F | Ne | Na | Mg | Al | Si | P |
|----------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 570 | 0.0633 | 0.0319 | 0.0276 | 0.0283 | 0.0295 | 0.0318 | 0.0319 | 0.0319 | 0.0302 | 0.0316 | 0.0305 | 0.0315 | 0.0307 | 0.0318 | 0.0309 |
| 580 | 0.0632 | 0.0318 | 0.0275 | 0.0283 | 0.0295 | 0.0318 | 0.0318 | 0.0319 | 0.0302 | 0.0316 | 0.0305 | 0.0314 | 0.0307 | 0.0318 | 0.0309 |
| 590 | 0.0632 | 0.0318 | 0.0275 | 0.0283 | 0.0295 | 0.0318 | 0.0318 | 0.0318 | 0.0302 | 0.0315 | 0.0305 | 0.0314 | 0.0307 | 0.0317 | 0.0308 |
| 600 | 0.0631 | 0.0318 | 0.0275 | 0.0282 | 0.0294 | 0.0318 | 0.0318 | 0.0318 | 0.0301 | 0.0315 | 0.0304 | 0.0314 | 0.0307 | 0.0317 | 0.0308 |
| 610 | 0.0631 | 0.0318 | 0.0275 | 0.0282 | 0.0294 | 0.0318 | 0.0318 | 0.0318 | 0.0301 | 0.0315 | 0.0304 | 0.0314 | 0.0306 | 0.0317 | 0.0308 |
| 620 | 0.0630 | 0.0317 | 0.0275 | 0.0282 | 0.0294 | 0.0317 | 0.0317 | 0.0318 | 0.0301 | 0.0315 | 0.0304 | 0.0314 | 0.0306 | 0.0317 | 0.0308 |
| 630 | 0.0630 | 0.0317 | 0.0274 | 0.0282 | 0.0294 | 0.0317 | 0.0317 | 0.0317 | 0.0301 | 0.0314 | 0.0304 | 0.0313 | 0.0306 | 0.0316 | 0.0307 |
| 640 | 0.0629 | 0.0317 | 0.0274 | 0.0281 | 0.0293 | 0.0317 | 0.0317 | 0.0317 | 0.0300 | 0.0314 | 0.0303 | 0.0313 | 0.0305 | 0.0316 | 0.0307 |
| 650 | 0.0628 | 0.0317 | 0.0274 | 0.0281 | 0.0293 | 0.0316 | 0.0317 | 0.0317 | 0.0300 | 0.0314 | 0.0303 | 0.0313 | 0.0305 | 0.0316 | 0.0307 |
| 660 | 0.0628 | 0.0316 | 0.0274 | 0.0281 | 0.0293 | 0.0316 | 0.0316 | 0.0316 | 0.0300 | 0.0314 | 0.0303 | 0.0312 | 0.0305 | 0.0315 | 0.0306 |
| 670 | 0.0627 | 0.0316 | 0.0273 | 0.0281 | 0.0292 | 0.0316 | 0.0316 | 0.0316 | 0.0299 | 0.0313 | 0.0302 | 0.0312 | 0.0305 | 0.0315 | 0.0306 |
| 680 | 0.0626 | 0.0316 | 0.0273 | 0.0280 | 0.0292 | 0.0315 | 0.0316 | 0.0316 | 0.0299 | 0.0313 | 0.0302 | 0.0312 | 0.0304 | 0.0315 | 0.0306 |
| 690 | 0.0626 | 0.0315 | 0.0273 | 0.0280 | 0.0292 | 0.0315 | 0.0315 | 0.0315 | 0.0299 | 0.0312 | 0.0302 | 0.0311 | 0.0304 | 0.0314 | 0.0305 |
| 700 | 0.0625 | 0.0315 | 0.0272 | 0.0280 | 0.0291 | 0.0315 | 0.0315 | 0.0315 | 0.0298 | 0.0312 | 0.0301 | 0.0311 | 0.0303 | 0.0314 | 0.0305 |
| 710 | 0.0624 | 0.0314 | 0.0272 | 0.0279 | 0.0291 | 0.0314 | 0.0314 | 0.0315 | 0.0298 | 0.0312 | 0.0301 | 0.0311 | 0.0303 | 0.0314 | 0.0305 |
| 720 | 0.0623 | 0.0314 | 0.0272 | 0.0279 | 0.0291 | 0.0314 | 0.0314 | 0.0314 | 0.0298 | 0.0311 | 0.0301 | 0.0310 | 0.0303 | 0.0313 | 0.0304 |
| 730 | 0.0623 | 0.0314 | 0.0271 | 0.0279 | 0.0290 | 0.0313 | 0.0314 | 0.0314 | 0.0297 | 0.0311 | 0.0300 | 0.0310 | 0.0302 | 0.0313 | 0.0304 |
| 740 | 0.0622 | 0.0313 | 0.0271 | 0.0278 | 0.0290 | 0.0313 | 0.0313 | 0.0313 | 0.0297 | 0.0311 | 0.0300 | 0.0309 | 0.0302 | 0.0312 | 0.0303 |
| 750 | 0.0621 | 0.0313 | 0.0271 | 0.0278 | 0.0289 | 0.0313 | 0.0313 | 0.0313 | 0.0297 | 0.0310 | 0.0300 | 0.0309 | 0.0302 | 0.0312 | 0.0303 |
| 760 | 0.0620 | 0.0312 | 0.0270 | 0.0277 | 0.0289 | 0.0312 | 0.0312 | 0.0313 | 0.0296 | 0.0310 | 0.0299 | 0.0308 | 0.0301 | 0.0312 | 0.0303 |
| 770 | 0.0619 | 0.0312 | 0.0270 | 0.0277 | 0.0289 | 0.0312 | 0.0312 | 0.0312 | 0.0296 | 0.0309 | 0.0299 | 0.0308 | 0.0301 | 0.0311 | 0.0302 |
| 780 | 0.0618 | 0.0312 | 0.0269 | 0.0277 | 0.0288 | 0.0311 | 0.0312 | 0.0312 | 0.0295 | 0.0309 | 0.0298 | 0.0308 | 0.0300 | 0.0311 | 0.0302 |
| 790 | 0.0617 | 0.0311 | 0.0269 | 0.0276 | 0.0288 | 0.0311 | 0.0311 | 0.0311 | 0.0295 | 0.0308 | 0.0298 | 0.0307 | 0.0300 | 0.0310 | 0.0301 |
| 800 | 0.0617 | 0.0311 | 0.0269 | 0.0276 | 0.0287 | 0.0310 | 0.0311 | 0.0311 | 0.0294 | 0.0308 | 0.0297 | 0.0307 | 0.0299 | 0.0310 | 0.0301 |
| 810 | 0.0616 | 0.0310 | 0.0268 | 0.0275 | 0.0287 | 0.0310 | 0.0310 | 0.0310 | 0.0294 | 0.0307 | 0.0297 | 0.0306 | 0.0299 | 0.0309 | 0.0300 |
| 820 | 0.0615 | 0.0310 | 0.0268 | 0.0275 | 0.0287 | 0.0310 | 0.0310 | 0.0310 | 0.0294 | 0.0307 | 0.0297 | 0.0306 | 0.0299 | 0.0309 | 0.0300 |
| 830 | 0.0614 | 0.0309 | 0.0267 | 0.0275 | 0.0286 | 0.0309 | 0.0309 | 0.0309 | 0.0293 | 0.0307 | 0.0296 | 0.0305 | 0.0298 | 0.0308 | 0.0300 |
| 840 | 0.0613 | 0.0309 | 0.0267 | 0.0274 | 0.0286 | 0.0309 | 0.0309 | 0.0309 | 0.0293 | 0.0306 | 0.0296 | 0.0305 | 0.0298 | 0.0308 | 0.0299 |
| 850 | 0.0612 | 0.0308 | 0.0267 | 0.0274 | 0.0285 | 0.0308 | 0.0308 | 0.0308 | 0.0292 | 0.0306 | 0.0295 | 0.0304 | 0.0297 | 0.0307 | 0.0299 |
| 860 | 0.0611 | 0.0308 | 0.0266 | 0.0273 | 0.0285 | 0.0308 | 0.0308 | 0.0308 | 0.0292 | 0.0305 | 0.0295 | 0.0304 | 0.0297 | 0.0307 | 0.0298 |
| 870 | 0.0610 | 0.0307 | 0.0266 | 0.0273 | 0.0284 | 0.0307 | 0.0307 | 0.0307 | 0.0291 | 0.0305 | 0.0294 | 0.0303 | 0.0296 | 0.0306 | 0.0298 |
| 880 | 0.0609 | 0.0307 | 0.0265 | 0.0272 | 0.0284 | 0.0307 | 0.0307 | 0.0307 | 0.0291 | 0.0304 | 0.0294 | 0.0303 | 0.0296 | 0.0306 | 0.0297 |
| 890 | 0.0608 | 0.0306 | 0.0265 | 0.0272 | 0.0283 | 0.0306 | 0.0306 | 0.0306 | 0.0290 | 0.0304 | 0.0293 | 0.0302 | 0.0295 | 0.0305 | 0.0297 |
| 900 | 0.0607 | 0.0306 | 0.0265 | 0.0272 | 0.0283 | 0.0306 | 0.0306 | 0.0306 | 0.0290 | 0.0303 | 0.0293 | 0.0302 | 0.0295 | 0.0305 | 0.0296 |
| 910 | 0.0606 | 0.0305 | 0.0264 | 0.0271 | 0.0283 | 0.0305 | 0.0305 | 0.0305 | 0.0289 | 0.0303 | 0.0292 | 0.0301 | 0.0294 | 0.0304 | 0.0296 |
| 920 | 0.0605 | 0.0305 | 0.0264 | 0.0271 | 0.0282 | 0.0305 | 0.0305 | 0.0305 | 0.0289 | 0.0302 | 0.0292 | 0.0301 | 0.0294 | 0.0304 | 0.0295 |
| 930 | 0.0604 | 0.0304 | 0.0263 | 0.0270 | 0.0282 | 0.0304 | 0.0304 | 0.0304 | 0.0288 | 0.0302 | 0.0291 | 0.0300 | 0.0293 | 0.0303 | 0.0295 |
| 940 | 0.0603 | 0.0304 | 0.0263 | 0.0270 | 0.0281 | 0.0304 | 0.0304 | 0.0304 | 0.0288 | 0.0301 | 0.0291 | 0.0300 | 0.0293 | 0.0303 | 0.0294 |
| 950 | 0.0602 | 0.0303 | 0.0262 | 0.0269 | 0.0281 | 0.0303 | 0.0303 | 0.0303 | 0.0287 | 0.0301 | 0.0290 | 0.0299 | 0.0292 | 0.0302 | 0.0294 |
| 960 | 0.0601 | 0.0303 | 0.0262 | 0.0269 | 0.0280 | 0.0303 | 0.0303 | 0.0303 | 0.0287 | 0.0300 | 0.0290 | 0.0299 | 0.0292 | 0.0302 | 0.0293 |
| 970 | 0.0600 | 0.0302 | 0.0261 | 0.0268 | 0.0280 | 0.0302 | 0.0302 | 0.0302 | 0.0286 | 0.0300 | 0.0289 | 0.0298 | 0.0291 | 0.0301 | 0.0293 |
| 980 | 0.0599 | 0.0302 | 0.0261 | 0.0268 | 0.0279 | 0.0302 | 0.0302 | 0.0302 | 0.0286 | 0.0299 | 0.0289 | 0.0298 | 0.0291 | 0.0301 | 0.0292 |
| 990 | 0.0598 | 0.0301 | 0.0261 | 0.0267 | 0.0279 | 0.0301 | 0.0301 | 0.0301 | 0.0285 | 0.0299 | 0.0288 | 0.0297 | 0.0290 | 0.0300 | 0.0292 |
| 1000 | 0.0597 | 0.0301 | 0.0260 | 0.0267 | 0.0278 | 0.0300 | 0.0301 | 0.0301 | 0.0285 | 0.0298 | 0.0288 | 0.0297 | 0.0290 | 0.0300 | 0.0291 |
| <i>E</i> (keV) | S | Cl | A | K | Ca | Sc | Ti | V | Cr | Mn | Fe | Co | Ni | Cu | Zn |
| 1 | 0.0004 | 0.0004 | 0.0004 | 0.0004 | 0.0004 | 0.0004 | 0.0004 | 0.0004 | 0.0004 | 0.0004 | 0.0004 | 0.0004 | 0.0004 | 0.0004 | 0.0004 |
| 2 | 0.0008 | 0.0008 | 0.0007 | 0.0008 | 0.0008 | 0.0008 | 0.0008 | 0.0007 | 0.0008 | 0.0008 | 0.0008 | 0.0008 | 0.0008 | 0.0008 | 0.0008 |
| 3 | 0.0012 | 0.0012 | 0.0011 | 0.0012 | 0.0012 | 0.0012 | 0.0011 | 0.0011 | 0.0011 | 0.0011 | 0.0011 | 0.0011 | 0.0012 | 0.0011 | 0.0011 |
| 4 | 0.0016 | 0.0016 | 0.0015 | 0.0016 | 0.0016 | 0.0015 | 0.0015 | 0.0015 | 0.0015 | 0.0015 | 0.0015 | 0.0015 | 0.0016 | 0.0015 | 0.0015 |
| 5 | 0.0020 | 0.0019 | 0.0018 | 0.0020 | 0.0020 | 0.0019 | 0.0019 | 0.0018 | 0.0019 | 0.0018 | 0.0019 | 0.0019 | 0.0019 | 0.0018 | 0.0019 |
| 6 | 0.0024 | 0.0023 | 0.0022 | 0.0023 | 0.0024 | 0.0023 | 0.0022 | 0.0022 | 0.0022 | 0.0022 | 0.0022 | 0.0022 | 0.0023 | 0.0022 | 0.0022 |
| 7 | 0.0028 | 0.0027 | 0.0025 | 0.0027 | 0.0028 | 0.0026 | 0.0026 | 0.0025 | 0.0026 | 0.0025 | 0.0026 | 0.0026 | 0.0027 | 0.0025 | 0.0026 |
| 8 | 0.0032 | 0.0030 | 0.0028 | 0.0031 | 0.0032 | 0.0030 | 0.0029 | 0.0029 | 0.0029 | 0.0029 | 0.0029 | 0.0029 | 0.0030 | 0.0029 | 0.0029 |
| 9 | 0.0035 | 0.0034 | 0.0032 | 0.0034 | 0.0035 | 0.0033 | 0.0032 | 0.0032 | 0.0033 | 0.0032 | 0.0033 | 0.0032 | 0.0034 | 0.0032 | 0.0032 |
| 10 | 0.0039 | 0.0037 | 0.0035 | 0.0038 | 0.0039 | 0.0036 | 0.0036 | 0.0035 | 0.0036 | 0.0035 | 0.0036 | 0.0036 | 0.0037 | 0.0035 | 0.0036 |
| 20 | 0.0072 | 0.0069 | 0.0065 | 0.0070 | 0.0072 | 0.0067 | 0.0066 | 0.0065 | 0.0067 | 0.0066 | 0.0067 | 0.0066 | 0.0069 | 0.0066 | 0.0066 |
| 30 | 0.0100 | 0.0097 | 0.0091 | 0.0098 | 0.0100 | 0.0094 | 0.0092 | 0.0091 | 0.0093 | 0.0092 | 0.0094 | 0.0092 | 0.0096 | 0.0092 | 0.0092 |
| 40 | 0.0125 | 0.0120 | 0.0113 | 0.0122 | 0.0125 | 0.0117 | 0.0115 | 0.0113 | 0.0116 | 0.0114 | 0.0117 | 0.0115 | 0.0120 | 0.0114 | 0.0115 |
| 50 | 0.0146 | 0.0141 | 0.0132 | 0.0143 | 0.0146 | 0.0137 | 0.0135 | 0.0132 | 0.0135 | 0.0133 | 0.0137 | 0.0134 | 0.0140 | 0.0134 | 0.0135 |
| 60 | 0.0165 | 0.0159 | 0.0149 | 0.0161 | 0.0165 | 0.0154 | 0.0152 | 0.0149 | 0.0153 | 0.0150 | 0.0154 | 0.0151 | 0.0158 | 0.0151 | 0.0152 |
| 70 | 0.0181 | 0.0174 | 0.0164 | 0.0177 | 0.0181 | 0.0170 | 0.0167 | 0.0164 | 0.0168 | 0.0165 | 0.0169 | 0.0166 | 0.0173 | 0.0166 | 0.0167 |
| 80 | 0.0196 | 0.0188 | 0.0177 | 0.0191 | 0.0196 | 0.0183 | 0.0180 | 0.0177 | 0.0181 | 0.0178 | 0.0183 | 0.0180 | 0.0187 | 0.0179 | 0.0180 |
| 90 | 0.0208 | 0.0200 | 0.0188 | 0.0203 | 0.0208 | 0.0195 | 0.0192 | 0.0189 | 0.0193 | 0.0190 | 0.0194 | 0.0191 | 0.0199 | 0.0191 | 0.0192 |
| 100 | 0.0220 | 0.0211 | 0.0198 | 0.0214 | 0.0220 | 0.0206 | 0.0202 | 0.0199 | 0.0203 | 0.0200 | 0.0205 | 0.0202 | 0.0210 | 0.0201 | 0.0202 |

TABLE 3. Compton component of the mass-energy absorption coefficient (cm/g) in the energy region 1 keV–1 MeV—Continued

| E(keV) | S | Cl | A | K | Ca | Sc | Ti | V | Cr | Mn | Fe | Co | Ni | Cu | Zn |
|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 110 | 0.0230 | 0.0221 | 0.0207 | 0.0224 | 0.0230 | 0.0215 | 0.0211 | 0.0208 | 0.0212 | 0.0209 | 0.0214 | 0.0211 | 0.0220 | 0.0210 | 0.0211 |
| 120 | 0.0239 | 0.0229 | 0.0215 | 0.0232 | 0.0239 | 0.0223 | 0.0220 | 0.0216 | 0.0221 | 0.0217 | 0.0222 | 0.0219 | 0.0228 | 0.0218 | 0.0219 |
| 130 | 0.0246 | 0.0237 | 0.0223 | 0.0240 | 0.0247 | 0.0231 | 0.0227 | 0.0223 | 0.0228 | 0.0225 | 0.0230 | 0.0226 | 0.0236 | 0.0225 | 0.0227 |
| 140 | 0.0254 | 0.0244 | 0.0229 | 0.0247 | 0.0254 | 0.0238 | 0.0233 | 0.0229 | 0.0235 | 0.0231 | 0.0237 | 0.0233 | 0.0243 | 0.0232 | 0.0233 |
| 150 | 0.0260 | 0.0250 | 0.0235 | 0.0253 | 0.0260 | 0.0244 | 0.0239 | 0.0235 | 0.0241 | 0.0237 | 0.0243 | 0.0239 | 0.0249 | 0.0238 | 0.0239 |
| 160 | 0.0266 | 0.0256 | 0.0240 | 0.0259 | 0.0266 | 0.0249 | 0.0245 | 0.0241 | 0.0246 | 0.0242 | 0.0248 | 0.0244 | 0.0254 | 0.0243 | 0.0245 |
| 170 | 0.0271 | 0.0261 | 0.0245 | 0.0264 | 0.0271 | 0.0254 | 0.0250 | 0.0245 | 0.0251 | 0.0247 | 0.0253 | 0.0249 | 0.0259 | 0.0248 | 0.0249 |
| 180 | 0.0276 | 0.0265 | 0.0249 | 0.0269 | 0.0276 | 0.0258 | 0.0254 | 0.0250 | 0.0255 | 0.0252 | 0.0257 | 0.0253 | 0.0264 | 0.0252 | 0.0254 |
| 190 | 0.0280 | 0.0269 | 0.0253 | 0.0273 | 0.0280 | 0.0262 | 0.0258 | 0.0253 | 0.0259 | 0.0255 | 0.0261 | 0.0257 | 0.0268 | 0.0256 | 0.0258 |
| 200 | 0.0284 | 0.0273 | 0.0257 | 0.0277 | 0.0284 | 0.0266 | 0.0261 | 0.0257 | 0.0263 | 0.0259 | 0.0265 | 0.0261 | 0.0272 | 0.0260 | 0.0261 |
| 210 | 0.0288 | 0.0276 | 0.0260 | 0.0280 | 0.0288 | 0.0269 | 0.0265 | 0.0260 | 0.0266 | 0.0262 | 0.0268 | 0.0264 | 0.0275 | 0.0263 | 0.0264 |
| 220 | 0.0291 | 0.0279 | 0.0263 | 0.0283 | 0.0291 | 0.0272 | 0.0268 | 0.0263 | 0.0269 | 0.0265 | 0.0271 | 0.0267 | 0.0278 | 0.0266 | 0.0267 |
| 230 | 0.0294 | 0.0282 | 0.0265 | 0.0286 | 0.0294 | 0.0275 | 0.0270 | 0.0266 | 0.0272 | 0.0268 | 0.0274 | 0.0270 | 0.0281 | 0.0269 | 0.0270 |
| 240 | 0.0296 | 0.0285 | 0.0268 | 0.0288 | 0.0296 | 0.0277 | 0.0273 | 0.0268 | 0.0274 | 0.0270 | 0.0276 | 0.0272 | 0.0283 | 0.0271 | 0.0273 |
| 250 | 0.0299 | 0.0287 | 0.0270 | 0.0291 | 0.0299 | 0.0280 | 0.0275 | 0.0270 | 0.0276 | 0.0272 | 0.0279 | 0.0274 | 0.0286 | 0.0273 | 0.0275 |
| 260 | 0.0301 | 0.0289 | 0.0272 | 0.0293 | 0.0301 | 0.0282 | 0.0277 | 0.0272 | 0.0278 | 0.0274 | 0.0281 | 0.0276 | 0.0288 | 0.0275 | 0.0277 |
| 270 | 0.0303 | 0.0291 | 0.0274 | 0.0295 | 0.0303 | 0.0284 | 0.0279 | 0.0274 | 0.0280 | 0.0276 | 0.0282 | 0.0278 | 0.0290 | 0.0277 | 0.0279 |
| 280 | 0.0305 | 0.0293 | 0.0275 | 0.0297 | 0.0305 | 0.0285 | 0.0280 | 0.0276 | 0.0282 | 0.0278 | 0.0284 | 0.0280 | 0.0291 | 0.0279 | 0.0280 |
| 290 | 0.0306 | 0.0294 | 0.0277 | 0.0298 | 0.0306 | 0.0287 | 0.0282 | 0.0277 | 0.0283 | 0.0279 | 0.0286 | 0.0281 | 0.0293 | 0.0280 | 0.0282 |
| 300 | 0.0308 | 0.0296 | 0.0278 | 0.0300 | 0.0308 | 0.0288 | 0.0283 | 0.0278 | 0.0285 | 0.0281 | 0.0287 | 0.0283 | 0.0294 | 0.0282 | 0.0283 |
| 310 | 0.0309 | 0.0297 | 0.0279 | 0.0301 | 0.0309 | 0.0290 | 0.0285 | 0.0280 | 0.0286 | 0.0282 | 0.0288 | 0.0284 | 0.0296 | 0.0283 | 0.0284 |
| 320 | 0.0310 | 0.0298 | 0.0280 | 0.0302 | 0.0310 | 0.0291 | 0.0286 | 0.0281 | 0.0287 | 0.0283 | 0.0289 | 0.0285 | 0.0297 | 0.0284 | 0.0285 |
| 330 | 0.0311 | 0.0299 | 0.0281 | 0.0303 | 0.0312 | 0.0292 | 0.0287 | 0.0282 | 0.0288 | 0.0284 | 0.0291 | 0.0286 | 0.0298 | 0.0285 | 0.0287 |
| 340 | 0.0312 | 0.0300 | 0.0282 | 0.0304 | 0.0313 | 0.0293 | 0.0288 | 0.0283 | 0.0289 | 0.0285 | 0.0291 | 0.0287 | 0.0299 | 0.0286 | 0.0287 |
| 350 | 0.0313 | 0.0301 | 0.0283 | 0.0305 | 0.0314 | 0.0293 | 0.0288 | 0.0284 | 0.0290 | 0.0286 | 0.0292 | 0.0288 | 0.0300 | 0.0287 | 0.0288 |
| 360 | 0.0314 | 0.0302 | 0.0284 | 0.0306 | 0.0314 | 0.0294 | 0.0289 | 0.0284 | 0.0291 | 0.0287 | 0.0293 | 0.0289 | 0.0300 | 0.0287 | 0.0289 |
| 370 | 0.0315 | 0.0303 | 0.0284 | 0.0307 | 0.0315 | 0.0295 | 0.0290 | 0.0285 | 0.0291 | 0.0287 | 0.0294 | 0.0289 | 0.0301 | 0.0288 | 0.0290 |
| 380 | 0.0316 | 0.0303 | 0.0285 | 0.0307 | 0.0316 | 0.0296 | 0.0290 | 0.0286 | 0.0292 | 0.0288 | 0.0294 | 0.0290 | 0.0302 | 0.0289 | 0.0290 |
| 390 | 0.0316 | 0.0304 | 0.0286 | 0.0308 | 0.0316 | 0.0296 | 0.0291 | 0.0286 | 0.0292 | 0.0288 | 0.0295 | 0.0290 | 0.0302 | 0.0289 | 0.0291 |
| 400 | 0.0317 | 0.0304 | 0.0286 | 0.0308 | 0.0317 | 0.0297 | 0.0291 | 0.0286 | 0.0293 | 0.0289 | 0.0295 | 0.0291 | 0.0303 | 0.0290 | 0.0291 |
| 410 | 0.0317 | 0.0305 | 0.0286 | 0.0309 | 0.0317 | 0.0297 | 0.0292 | 0.0287 | 0.0293 | 0.0289 | 0.0296 | 0.0291 | 0.0303 | 0.0290 | 0.0292 |
| 420 | 0.0317 | 0.0305 | 0.0287 | 0.0309 | 0.0318 | 0.0297 | 0.0292 | 0.0287 | 0.0294 | 0.0289 | 0.0296 | 0.0292 | 0.0304 | 0.0290 | 0.0292 |
| 430 | 0.0318 | 0.0305 | 0.0287 | 0.0309 | 0.0318 | 0.0298 | 0.0292 | 0.0288 | 0.0294 | 0.0290 | 0.0296 | 0.0292 | 0.0304 | 0.0291 | 0.0292 |
| 440 | 0.0318 | 0.0306 | 0.0287 | 0.0310 | 0.0318 | 0.0298 | 0.0293 | 0.0288 | 0.0294 | 0.0290 | 0.0297 | 0.0292 | 0.0304 | 0.0291 | 0.0293 |
| 450 | 0.0318 | 0.0306 | 0.0288 | 0.0310 | 0.0318 | 0.0298 | 0.0293 | 0.0288 | 0.0294 | 0.0290 | 0.0297 | 0.0292 | 0.0304 | 0.0291 | 0.0293 |
| 460 | 0.0318 | 0.0306 | 0.0288 | 0.0310 | 0.0319 | 0.0298 | 0.0293 | 0.0288 | 0.0295 | 0.0290 | 0.0297 | 0.0292 | 0.0304 | 0.0291 | 0.0293 |
| 470 | 0.0319 | 0.0306 | 0.0288 | 0.0310 | 0.0319 | 0.0298 | 0.0293 | 0.0288 | 0.0295 | 0.0291 | 0.0297 | 0.0293 | 0.0305 | 0.0291 | 0.0293 |
| 480 | 0.0319 | 0.0306 | 0.0288 | 0.0310 | 0.0319 | 0.0298 | 0.0293 | 0.0288 | 0.0295 | 0.0291 | 0.0297 | 0.0293 | 0.0305 | 0.0292 | 0.0293 |
| 490 | 0.0319 | 0.0306 | 0.0288 | 0.0310 | 0.0319 | 0.0299 | 0.0293 | 0.0288 | 0.0295 | 0.0291 | 0.0297 | 0.0293 | 0.0305 | 0.0292 | 0.0293 |
| 500 | 0.0319 | 0.0306 | 0.0288 | 0.0310 | 0.0319 | 0.0299 | 0.0293 | 0.0288 | 0.0295 | 0.0291 | 0.0297 | 0.0293 | 0.0305 | 0.0292 | 0.0293 |
| 510 | 0.0319 | 0.0306 | 0.0288 | 0.0310 | 0.0319 | 0.0299 | 0.0293 | 0.0288 | 0.0295 | 0.0291 | 0.0297 | 0.0293 | 0.0305 | 0.0292 | 0.0293 |
| 520 | 0.0319 | 0.0306 | 0.0288 | 0.0310 | 0.0319 | 0.0298 | 0.0293 | 0.0288 | 0.0295 | 0.0291 | 0.0297 | 0.0293 | 0.0305 | 0.0292 | 0.0293 |
| 530 | 0.0319 | 0.0306 | 0.0288 | 0.0310 | 0.0319 | 0.0298 | 0.0293 | 0.0288 | 0.0295 | 0.0291 | 0.0297 | 0.0293 | 0.0305 | 0.0291 | 0.0293 |
| 540 | 0.0319 | 0.0306 | 0.0288 | 0.0310 | 0.0319 | 0.0298 | 0.0293 | 0.0288 | 0.0295 | 0.0290 | 0.0297 | 0.0293 | 0.0305 | 0.0291 | 0.0293 |
| 550 | 0.0318 | 0.0306 | 0.0288 | 0.0310 | 0.0319 | 0.0298 | 0.0293 | 0.0288 | 0.0295 | 0.0290 | 0.0297 | 0.0292 | 0.0304 | 0.0291 | 0.0293 |
| 560 | 0.0318 | 0.0306 | 0.0288 | 0.0310 | 0.0318 | 0.0298 | 0.0293 | 0.0288 | 0.0294 | 0.0290 | 0.0297 | 0.0292 | 0.0304 | 0.0291 | 0.0293 |
| 570 | 0.0318 | 0.0306 | 0.0287 | 0.0310 | 0.0318 | 0.0298 | 0.0293 | 0.0288 | 0.0294 | 0.0290 | 0.0297 | 0.0292 | 0.0304 | 0.0291 | 0.0293 |
| 580 | 0.0318 | 0.0306 | 0.0287 | 0.0310 | 0.0318 | 0.0298 | 0.0293 | 0.0288 | 0.0294 | 0.0290 | 0.0297 | 0.0292 | 0.0304 | 0.0291 | 0.0292 |
| 590 | 0.0318 | 0.0305 | 0.0287 | 0.0309 | 0.0318 | 0.0298 | 0.0292 | 0.0287 | 0.0294 | 0.0290 | 0.0296 | 0.0292 | 0.0304 | 0.0291 | 0.0292 |
| 600 | 0.0317 | 0.0305 | 0.0287 | 0.0309 | 0.0318 | 0.0297 | 0.0292 | 0.0287 | 0.0294 | 0.0289 | 0.0296 | 0.0292 | 0.0304 | 0.0290 | 0.0292 |
| 610 | 0.0317 | 0.0305 | 0.0287 | 0.0309 | 0.0317 | 0.0297 | 0.0292 | 0.0287 | 0.0293 | 0.0289 | 0.0296 | 0.0291 | 0.0303 | 0.0290 | 0.0292 |
| 620 | 0.0317 | 0.0305 | 0.0286 | 0.0309 | 0.0317 | 0.0297 | 0.0292 | 0.0287 | 0.0293 | 0.0289 | 0.0296 | 0.0291 | 0.0303 | 0.0290 | 0.0292 |
| 630 | 0.0317 | 0.0304 | 0.0286 | 0.0308 | 0.0317 | 0.0297 | 0.0291 | 0.0287 | 0.0293 | 0.0289 | 0.0295 | 0.0291 | 0.0303 | 0.0290 | 0.0291 |
| 640 | 0.0316 | 0.0304 | 0.0286 | 0.0308 | 0.0316 | 0.0296 | 0.0291 | 0.0286 | 0.0293 | 0.0288 | 0.0295 | 0.0291 | 0.0302 | 0.0289 | 0.0291 |
| 650 | 0.0316 | 0.0304 | 0.0286 | 0.0308 | 0.0316 | 0.0296 | 0.0291 | 0.0286 | 0.0292 | 0.0288 | 0.0295 | 0.0290 | 0.0302 | 0.0289 | 0.0291 |
| 660 | 0.0316 | 0.0303 | 0.0285 | 0.0307 | 0.0316 | 0.0296 | 0.0291 | 0.0286 | 0.0292 | 0.0288 | 0.0294 | 0.0290 | 0.0302 | 0.0289 | 0.0290 |
| 670 | 0.0315 | 0.0303 | 0.0285 | 0.0307 | 0.0316 | 0.0295 | 0.0290 | 0.0285 | 0.0292 | 0.0288 | 0.0294 | 0.0290 | 0.0302 | 0.0288 | 0.0290 |
| 680 | 0.0315 | 0.0303 | 0.0285 | 0.0307 | 0.0315 | 0.0295 | 0.0290 | 0.0285 | 0.0291 | 0.0287 | 0.0294 | 0.0289 | 0.0301 | 0.0288 | 0.0290 |
| 690 | 0.0315 | 0.0302 | 0.0284 | 0.0306 | 0.0315 | 0.0295 | 0.0290 | 0.0285 | 0.0291 | 0.0287 | 0.0294 | 0.0289 | 0.0301 | 0.0288 | 0.0289 |
| 700 | 0.0314 | 0.0302 | 0.0284 | 0.0306 | 0.0314 | 0.0294 | 0.0289 | 0.0284 | 0.0291 | 0.0287 | 0.0293 | 0.0289 | 0.0300 | 0.0287 | 0.0289 |
| 710 | 0.0314 | 0.0302 | 0.0284 | 0.0306 | 0.0314 | 0.0294 | 0.0289 | 0.0284 | 0.0290 | 0.0286 | 0.0293 | 0.0288 | 0.0300 | 0.0287 | 0.0289 |
| 720 | 0.0314 | 0.0301 | 0.0283 | 0.0305 | 0.0314 | 0.0294 | 0.0289 | 0.0284 | 0.0290 | 0.0286 | 0.0292 | 0.0288 | 0.0300 | 0.0287 | 0.0288 |
| 730 | 0.0313 | 0.0301 | 0.0283 | 0.0305 | 0.0313 | 0.0293 | 0.0288 | 0.0283 | 0.0290 | 0.0286 | 0.0292 | 0.0288 | 0.0299 | 0.0286 | 0.0288 |
| 740 | 0.0313 | 0.0301 | 0.0282 | 0.0304 | 0.0313 | 0.0293 | 0.0288 | 0.0283 | 0.0289 | 0.0285 | 0.0292 | 0.0287 | 0.0299 | 0.0286 | 0.0288 |
| 750 | 0.0312 | 0.0300 | 0.0282 | 0.0304 | 0.0312 | 0.0292 | 0.0287 | 0.0283 | 0.0289 | 0.0285 | 0.0291 | 0.0287 | 0.0299 | 0.0286 | 0.0287 |

TABLE 3. Compton component of the mass-energy absorption coefficient (cm/g) in the energy region 1 keV–1 MeV—Continued

| <i>E</i> (keV) | S | Cl | A | K | Ca | Sc | Ti | V | Cr | Mn | Fe | Co | Ni | Cu | Zn |
|----------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 760 | 0.0312 | 0.0300 | 0.0282 | 0.0304 | 0.0312 | 0.0292 | 0.0287 | 0.0282 | 0.0288 | 0.0284 | 0.0291 | 0.0286 | 0.0298 | 0.0285 | 0.0287 |
| 770 | 0.0311 | 0.0299 | 0.0281 | 0.0303 | 0.0312 | 0.0292 | 0.0287 | 0.0282 | 0.0288 | 0.0284 | 0.0290 | 0.0286 | 0.0298 | 0.0285 | 0.0286 |
| 780 | 0.0311 | 0.0299 | 0.0281 | 0.0303 | 0.0311 | 0.0291 | 0.0286 | 0.0281 | 0.0288 | 0.0284 | 0.0290 | 0.0286 | 0.0297 | 0.0284 | 0.0286 |
| 790 | 0.0311 | 0.0298 | 0.0281 | 0.0302 | 0.0311 | 0.0291 | 0.0286 | 0.0281 | 0.0287 | 0.0283 | 0.0290 | 0.0285 | 0.0297 | 0.0284 | 0.0286 |
| 800 | 0.0310 | 0.0298 | 0.0280 | 0.0302 | 0.0310 | 0.0290 | 0.0285 | 0.0281 | 0.0287 | 0.0283 | 0.0289 | 0.0285 | 0.0296 | 0.0284 | 0.0285 |
| 810 | 0.0310 | 0.0298 | 0.0280 | 0.0301 | 0.0310 | 0.0290 | 0.0285 | 0.0280 | 0.0286 | 0.0282 | 0.0289 | 0.0284 | 0.0296 | 0.0283 | 0.0285 |
| 820 | 0.0309 | 0.0297 | 0.0279 | 0.0301 | 0.0309 | 0.0290 | 0.0285 | 0.0280 | 0.0286 | 0.0282 | 0.0288 | 0.0284 | 0.0296 | 0.0283 | 0.0284 |
| 830 | 0.0309 | 0.0297 | 0.0279 | 0.0301 | 0.0309 | 0.0289 | 0.0284 | 0.0279 | 0.0285 | 0.0281 | 0.0288 | 0.0283 | 0.0295 | 0.0282 | 0.0284 |
| 840 | 0.0308 | 0.0296 | 0.0278 | 0.0300 | 0.0308 | 0.0289 | 0.0284 | 0.0279 | 0.0285 | 0.0281 | 0.0287 | 0.0283 | 0.0295 | 0.0282 | 0.0283 |
| 850 | 0.0308 | 0.0296 | 0.0278 | 0.0300 | 0.0308 | 0.0288 | 0.0283 | 0.0278 | 0.0285 | 0.0281 | 0.0287 | 0.0283 | 0.0294 | 0.0281 | 0.0283 |
| 860 | 0.0307 | 0.0295 | 0.0278 | 0.0299 | 0.0307 | 0.0288 | 0.0283 | 0.0278 | 0.0284 | 0.0280 | 0.0287 | 0.0282 | 0.0294 | 0.0281 | 0.0283 |
| 870 | 0.0307 | 0.0295 | 0.0277 | 0.0299 | 0.0307 | 0.0287 | 0.0282 | 0.0278 | 0.0284 | 0.0280 | 0.0286 | 0.0282 | 0.0293 | 0.0281 | 0.0282 |
| 880 | 0.0306 | 0.0294 | 0.0277 | 0.0298 | 0.0306 | 0.0287 | 0.0282 | 0.0277 | 0.0283 | 0.0279 | 0.0286 | 0.0281 | 0.0293 | 0.0280 | 0.0282 |
| 890 | 0.0306 | 0.0294 | 0.0276 | 0.0298 | 0.0306 | 0.0286 | 0.0281 | 0.0277 | 0.0283 | 0.0279 | 0.0285 | 0.0281 | 0.0292 | 0.0280 | 0.0281 |
| 900 | 0.0305 | 0.0293 | 0.0276 | 0.0297 | 0.0305 | 0.0286 | 0.0281 | 0.0276 | 0.0282 | 0.0278 | 0.0285 | 0.0280 | 0.0292 | 0.0279 | 0.0281 |
| 910 | 0.0305 | 0.0293 | 0.0275 | 0.0297 | 0.0305 | 0.0285 | 0.0280 | 0.0276 | 0.0282 | 0.0278 | 0.0284 | 0.0280 | 0.0291 | 0.0279 | 0.0280 |
| 920 | 0.0304 | 0.0292 | 0.0275 | 0.0296 | 0.0304 | 0.0285 | 0.0280 | 0.0275 | 0.0281 | 0.0277 | 0.0284 | 0.0279 | 0.0291 | 0.0278 | 0.0280 |
| 930 | 0.0304 | 0.0292 | 0.0274 | 0.0296 | 0.0304 | 0.0284 | 0.0280 | 0.0275 | 0.0281 | 0.0277 | 0.0283 | 0.0279 | 0.0290 | 0.0278 | 0.0279 |
| 940 | 0.0303 | 0.0291 | 0.0274 | 0.0295 | 0.0303 | 0.0284 | 0.0279 | 0.0274 | 0.0280 | 0.0277 | 0.0283 | 0.0278 | 0.0290 | 0.0277 | 0.0279 |
| 950 | 0.0303 | 0.0291 | 0.0273 | 0.0295 | 0.0303 | 0.0283 | 0.0279 | 0.0274 | 0.0280 | 0.0276 | 0.0282 | 0.0278 | 0.0289 | 0.0277 | 0.0278 |
| 960 | 0.0302 | 0.0290 | 0.0273 | 0.0294 | 0.0302 | 0.0283 | 0.0278 | 0.0273 | 0.0280 | 0.0276 | 0.0282 | 0.0278 | 0.0289 | 0.0276 | 0.0278 |
| 970 | 0.0302 | 0.0290 | 0.0273 | 0.0294 | 0.0302 | 0.0283 | 0.0278 | 0.0273 | 0.0279 | 0.0275 | 0.0281 | 0.0277 | 0.0288 | 0.0276 | 0.0278 |
| 980 | 0.0301 | 0.0289 | 0.0272 | 0.0293 | 0.0301 | 0.0282 | 0.0277 | 0.0272 | 0.0279 | 0.0275 | 0.0281 | 0.0277 | 0.0288 | 0.0275 | 0.0277 |
| 990 | 0.0301 | 0.0289 | 0.0272 | 0.0293 | 0.0301 | 0.0282 | 0.0277 | 0.0272 | 0.0278 | 0.0274 | 0.0280 | 0.0276 | 0.0287 | 0.0275 | 0.0277 |
| 1000 | 0.0300 | 0.0288 | 0.0271 | 0.0292 | 0.0300 | 0.0281 | 0.0276 | 0.0272 | 0.0278 | 0.0274 | 0.0280 | 0.0276 | 0.0287 | 0.0275 | 0.0276 |
| <i>E</i> (keV) | Ga | Ge | S | Se | Br | Kr | Rb | Sr | Y | Zr | Nb | Mo | Tc | Ru | Rh |
| 1 | 0.0004 | 0.0004 | 0.0004 | 0.0004 | 0.0004 | 0.0004 | 0.0004 | 0.0004 | 0.0004 | 0.0004 | 0.0004 | 0.0004 | 0.0004 | 0.0004 | 0.0004 |
| 2 | 0.0007 | 0.0007 | 0.0007 | 0.0007 | 0.0007 | 0.0007 | 0.0007 | 0.0007 | 0.0007 | 0.0007 | 0.0007 | 0.0007 | 0.0007 | 0.0007 | 0.0007 |
| 3 | 0.0011 | 0.0011 | 0.0011 | 0.0011 | 0.0011 | 0.0011 | 0.0011 | 0.0011 | 0.0011 | 0.0011 | 0.0011 | 0.0011 | 0.0011 | 0.0011 | 0.0011 |
| 4 | 0.0015 | 0.0014 | 0.0014 | 0.0014 | 0.0014 | 0.0014 | 0.0014 | 0.0014 | 0.0014 | 0.0014 | 0.0014 | 0.0014 | 0.0014 | 0.0014 | 0.0014 |
| 5 | 0.0018 | 0.0018 | 0.0018 | 0.0017 | 0.0018 | 0.0017 | 0.0018 | 0.0018 | 0.0018 | 0.0018 | 0.0018 | 0.0018 | 0.0018 | 0.0018 | 0.0018 |
| 6 | 0.0021 | 0.0021 | 0.0021 | 0.0021 | 0.0021 | 0.0021 | 0.0021 | 0.0021 | 0.0021 | 0.0021 | 0.0021 | 0.0021 | 0.0021 | 0.0021 | 0.0021 |
| 7 | 0.0025 | 0.0025 | 0.0025 | 0.0024 | 0.0024 | 0.0024 | 0.0024 | 0.0024 | 0.0024 | 0.0024 | 0.0025 | 0.0024 | 0.0024 | 0.0024 | 0.0024 |
| 8 | 0.0028 | 0.0028 | 0.0028 | 0.0027 | 0.0028 | 0.0027 | 0.0027 | 0.0027 | 0.0028 | 0.0028 | 0.0028 | 0.0028 | 0.0027 | 0.0028 | 0.0028 |
| 9 | 0.0031 | 0.0031 | 0.0031 | 0.0030 | 0.0031 | 0.0030 | 0.0031 | 0.0031 | 0.0031 | 0.0031 | 0.0031 | 0.0031 | 0.0031 | 0.0031 | 0.0031 |
| 10 | 0.0035 | 0.0034 | 0.0034 | 0.0033 | 0.0034 | 0.0033 | 0.0034 | 0.0034 | 0.0034 | 0.0034 | 0.0034 | 0.0034 | 0.0034 | 0.0034 | 0.0034 |
| 20 | 0.0064 | 0.0064 | 0.0064 | 0.0062 | 0.0063 | 0.0062 | 0.0062 | 0.0063 | 0.0063 | 0.0063 | 0.0064 | 0.0063 | 0.0063 | 0.0063 | 0.0063 |
| 30 | 0.0089 | 0.0089 | 0.0089 | 0.0087 | 0.0088 | 0.0086 | 0.0087 | 0.0087 | 0.0088 | 0.0088 | 0.0089 | 0.0088 | 0.0087 | 0.0088 | 0.0088 |
| 40 | 0.0111 | 0.0110 | 0.0110 | 0.0108 | 0.0110 | 0.0108 | 0.0108 | 0.0109 | 0.0110 | 0.0110 | 0.0111 | 0.0110 | 0.0109 | 0.0109 | 0.0110 |
| 50 | 0.0130 | 0.0129 | 0.0129 | 0.0126 | 0.0128 | 0.0126 | 0.0127 | 0.0127 | 0.0129 | 0.0129 | 0.0129 | 0.0128 | 0.0127 | 0.0128 | 0.0128 |
| 60 | 0.0147 | 0.0146 | 0.0146 | 0.0142 | 0.0145 | 0.0142 | 0.0143 | 0.0143 | 0.0145 | 0.0145 | 0.0146 | 0.0145 | 0.0144 | 0.0144 | 0.0145 |
| 70 | 0.0162 | 0.0160 | 0.0160 | 0.0156 | 0.0159 | 0.0156 | 0.0157 | 0.0158 | 0.0159 | 0.0159 | 0.0160 | 0.0159 | 0.0158 | 0.0158 | 0.0159 |
| 80 | 0.0174 | 0.0173 | 0.0173 | 0.0169 | 0.0172 | 0.0168 | 0.0170 | 0.0170 | 0.0172 | 0.0172 | 0.0173 | 0.0172 | 0.0170 | 0.0171 | 0.0172 |
| 90 | 0.0186 | 0.0184 | 0.0184 | 0.0180 | 0.0183 | 0.0179 | 0.0181 | 0.0181 | 0.0183 | 0.0183 | 0.0184 | 0.0183 | 0.0181 | 0.0182 | 0.0183 |
| 100 | 0.0196 | 0.0194 | 0.0194 | 0.0190 | 0.0193 | 0.0189 | 0.0191 | 0.0191 | 0.0193 | 0.0193 | 0.0194 | 0.0193 | 0.0191 | 0.0192 | 0.0192 |
| 110 | 0.0205 | 0.0203 | 0.0203 | 0.0198 | 0.0202 | 0.0198 | 0.0199 | 0.0200 | 0.0202 | 0.0202 | 0.0203 | 0.0201 | 0.0200 | 0.0200 | 0.0201 |
| 120 | 0.0213 | 0.0211 | 0.0211 | 0.0206 | 0.0209 | 0.0205 | 0.0207 | 0.0207 | 0.0210 | 0.0210 | 0.0211 | 0.0209 | 0.0208 | 0.0208 | 0.0209 |
| 130 | 0.0220 | 0.0218 | 0.0218 | 0.0213 | 0.0216 | 0.0212 | 0.0214 | 0.0214 | 0.0217 | 0.0217 | 0.0218 | 0.0216 | 0.0215 | 0.0215 | 0.0216 |
| 140 | 0.0226 | 0.0224 | 0.0224 | 0.0219 | 0.0223 | 0.0218 | 0.0220 | 0.0220 | 0.0223 | 0.0223 | 0.0224 | 0.0223 | 0.0221 | 0.0221 | 0.0222 |
| 150 | 0.0232 | 0.0230 | 0.0230 | 0.0224 | 0.0228 | 0.0224 | 0.0226 | 0.0226 | 0.0229 | 0.0229 | 0.0230 | 0.0228 | 0.0226 | 0.0227 | 0.0228 |
| 160 | 0.0237 | 0.0235 | 0.0235 | 0.0229 | 0.0233 | 0.0229 | 0.0231 | 0.0231 | 0.0234 | 0.0234 | 0.0235 | 0.0233 | 0.0231 | 0.0232 | 0.0233 |
| 170 | 0.0242 | 0.0240 | 0.0239 | 0.0234 | 0.0238 | 0.0233 | 0.0235 | 0.0236 | 0.0238 | 0.0238 | 0.0240 | 0.0238 | 0.0236 | 0.0237 | 0.0238 |
| 180 | 0.0246 | 0.0244 | 0.0243 | 0.0238 | 0.0242 | 0.0238 | 0.0239 | 0.0240 | 0.0243 | 0.0242 | 0.0244 | 0.0242 | 0.0240 | 0.0241 | 0.0242 |
| 190 | 0.0250 | 0.0248 | 0.0247 | 0.0242 | 0.0246 | 0.0241 | 0.0243 | 0.0243 | 0.0246 | 0.0246 | 0.0248 | 0.0246 | 0.0244 | 0.0244 | 0.0246 |
| 200 | 0.0253 | 0.0251 | 0.0251 | 0.0245 | 0.0249 | 0.0245 | 0.0246 | 0.0247 | 0.0250 | 0.0250 | 0.0251 | 0.0249 | 0.0247 | 0.0248 | 0.0249 |
| 210 | 0.0256 | 0.0254 | 0.0254 | 0.0248 | 0.0252 | 0.0248 | 0.0249 | 0.0250 | 0.0253 | 0.0253 | 0.0254 | 0.0252 | 0.0250 | 0.0251 | 0.0252 |
| 220 | 0.0259 | 0.0257 | 0.0257 | 0.0251 | 0.0255 | 0.0250 | 0.0252 | 0.0253 | 0.0256 | 0.0255 | 0.0257 | 0.0255 | 0.0253 | 0.0254 | 0.0255 |
| 230 | 0.0262 | 0.0259 | 0.0259 | 0.0253 | 0.0258 | 0.0253 | 0.0255 | 0.0255 | 0.0258 | 0.0258 | 0.0260 | 0.0258 | 0.0256 | 0.0256 | 0.0257 |
| 240 | 0.0264 | 0.0262 | 0.0262 | 0.0256 | 0.0260 | 0.0255 | 0.0257 | 0.0257 | 0.0260 | 0.0260 | 0.0262 | 0.0260 | 0.0258 | 0.0259 | 0.0260 |
| 250 | 0.0266 | 0.0264 | 0.0264 | 0.0258 | 0.0262 | 0.0257 | 0.0259 | 0.0260 | 0.0263 | 0.0262 | 0.0264 | 0.0262 | 0.0260 | 0.0261 | 0.0262 |
| 260 | 0.0268 | 0.0266 | 0.0266 | 0.0260 | 0.0264 | 0.0259 | 0.0261 | 0.0261 | 0.0265 | 0.0264 | 0.0266 | 0.0264 | 0.0262 | 0.0263 | 0.0264 |
| 270 | 0.0270 | 0.0268 | 0.0267 | 0.0261 | 0.0266 | 0.0261 | 0.0263 | 0.0263 | 0.0266 | 0.0266 | 0.0268 | 0.0266 | 0.0264 | 0.0264 | 0.0265 |
| 280 | 0.0271 | 0.0269 | 0.0269 | 0.0263 | 0.0267 | 0.0262 | 0.0264 | 0.0265 | 0.0268 | 0.0268 | 0.0269 | 0.0267 | 0.0265 | 0.0266 | 0.0267 |
| 290 | 0.0273 | 0.0271 | 0.0270 | 0.0264 | 0.0269 | 0.0264 | 0.0266 | 0.0266 | 0.0269 | 0.0269 | 0.0271 | 0.0269 | 0.0267 | 0.0267 | 0.0268 |

TABLE 3. Compton component of the mass-energy absorption coefficient (cm/g) in the energy region 1 keV–1 MeV—Continued

| E(keV) | Ga | Ge | S | Se | Br | Kr | Rb | Sr | Y | Zr | Nb | Mo | Tc | Ru | Rh |
|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 300 | 0.0274 | 0.0272 | 0.0272 | 0.0266 | 0.0270 | 0.0265 | 0.0267 | 0.0268 | 0.0271 | 0.0270 | 0.0272 | 0.0270 | 0.0268 | 0.0269 | 0.0270 |
| 310 | 0.0275 | 0.0273 | 0.0273 | 0.0267 | 0.0271 | 0.0266 | 0.0268 | 0.0269 | 0.0272 | 0.0272 | 0.0273 | 0.0271 | 0.0269 | 0.0270 | 0.0271 |
| 320 | 0.0277 | 0.0274 | 0.0274 | 0.0268 | 0.0272 | 0.0267 | 0.0269 | 0.0270 | 0.0273 | 0.0273 | 0.0275 | 0.0272 | 0.0270 | 0.0271 | 0.0272 |
| 330 | 0.0278 | 0.0275 | 0.0275 | 0.0269 | 0.0273 | 0.0268 | 0.0270 | 0.0271 | 0.0274 | 0.0274 | 0.0275 | 0.0273 | 0.0271 | 0.0272 | 0.0273 |
| 340 | 0.0278 | 0.0276 | 0.0276 | 0.0270 | 0.0274 | 0.0269 | 0.0271 | 0.0272 | 0.0275 | 0.0275 | 0.0276 | 0.0274 | 0.0272 | 0.0273 | 0.0274 |
| 350 | 0.0279 | 0.0277 | 0.0277 | 0.0270 | 0.0275 | 0.0270 | 0.0272 | 0.0272 | 0.0276 | 0.0275 | 0.0277 | 0.0275 | 0.0273 | 0.0273 | 0.0275 |
| 360 | 0.0280 | 0.0278 | 0.0277 | 0.0271 | 0.0276 | 0.0271 | 0.0273 | 0.0273 | 0.0276 | 0.0276 | 0.0278 | 0.0276 | 0.0274 | 0.0274 | 0.0275 |
| 370 | 0.0281 | 0.0278 | 0.0278 | 0.0272 | 0.0276 | 0.0271 | 0.0273 | 0.0274 | 0.0277 | 0.0277 | 0.0279 | 0.0276 | 0.0274 | 0.0275 | 0.0276 |
| 380 | 0.0281 | 0.0279 | 0.0279 | 0.0272 | 0.0277 | 0.0272 | 0.0274 | 0.0274 | 0.0277 | 0.0277 | 0.0279 | 0.0277 | 0.0275 | 0.0275 | 0.0277 |
| 390 | 0.0282 | 0.0279 | 0.0279 | 0.0273 | 0.0278 | 0.0272 | 0.0274 | 0.0275 | 0.0278 | 0.0278 | 0.0280 | 0.0277 | 0.0275 | 0.0276 | 0.0277 |
| 400 | 0.0282 | 0.0280 | 0.0280 | 0.0273 | 0.0278 | 0.0273 | 0.0275 | 0.0275 | 0.0278 | 0.0278 | 0.0280 | 0.0278 | 0.0276 | 0.0276 | 0.0278 |
| 410 | 0.0283 | 0.0280 | 0.0280 | 0.0274 | 0.0278 | 0.0273 | 0.0275 | 0.0276 | 0.0279 | 0.0279 | 0.0280 | 0.0278 | 0.0276 | 0.0277 | 0.0278 |
| 420 | 0.0283 | 0.0281 | 0.0280 | 0.0274 | 0.0279 | 0.0273 | 0.0275 | 0.0276 | 0.0279 | 0.0279 | 0.0281 | 0.0279 | 0.0276 | 0.0277 | 0.0278 |
| 430 | 0.0283 | 0.0281 | 0.0281 | 0.0274 | 0.0279 | 0.0274 | 0.0276 | 0.0276 | 0.0279 | 0.0279 | 0.0281 | 0.0279 | 0.0277 | 0.0277 | 0.0279 |
| 440 | 0.0283 | 0.0281 | 0.0281 | 0.0274 | 0.0279 | 0.0274 | 0.0276 | 0.0276 | 0.0280 | 0.0280 | 0.0281 | 0.0279 | 0.0277 | 0.0278 | 0.0279 |
| 450 | 0.0284 | 0.0281 | 0.0281 | 0.0275 | 0.0279 | 0.0274 | 0.0276 | 0.0277 | 0.0280 | 0.0280 | 0.0282 | 0.0279 | 0.0277 | 0.0278 | 0.0279 |
| 460 | 0.0284 | 0.0281 | 0.0281 | 0.0275 | 0.0280 | 0.0274 | 0.0276 | 0.0277 | 0.0280 | 0.0280 | 0.0282 | 0.0279 | 0.0277 | 0.0278 | 0.0279 |
| 470 | 0.0284 | 0.0282 | 0.0281 | 0.0275 | 0.0280 | 0.0274 | 0.0276 | 0.0277 | 0.0280 | 0.0280 | 0.0282 | 0.0280 | 0.0277 | 0.0278 | 0.0279 |
| 480 | 0.0284 | 0.0282 | 0.0281 | 0.0275 | 0.0280 | 0.0274 | 0.0276 | 0.0277 | 0.0280 | 0.0280 | 0.0282 | 0.0280 | 0.0277 | 0.0278 | 0.0279 |
| 490 | 0.0284 | 0.0282 | 0.0281 | 0.0275 | 0.0280 | 0.0274 | 0.0277 | 0.0277 | 0.0280 | 0.0280 | 0.0282 | 0.0280 | 0.0277 | 0.0278 | 0.0279 |
| 500 | 0.0284 | 0.0282 | 0.0281 | 0.0275 | 0.0280 | 0.0274 | 0.0277 | 0.0277 | 0.0280 | 0.0280 | 0.0282 | 0.0280 | 0.0277 | 0.0278 | 0.0279 |
| 510 | 0.0284 | 0.0282 | 0.0281 | 0.0275 | 0.0280 | 0.0274 | 0.0277 | 0.0277 | 0.0280 | 0.0280 | 0.0282 | 0.0280 | 0.0277 | 0.0278 | 0.0279 |
| 520 | 0.0284 | 0.0282 | 0.0281 | 0.0275 | 0.0280 | 0.0274 | 0.0277 | 0.0277 | 0.0280 | 0.0280 | 0.0282 | 0.0280 | 0.0277 | 0.0278 | 0.0279 |
| 530 | 0.0284 | 0.0282 | 0.0281 | 0.0275 | 0.0280 | 0.0274 | 0.0276 | 0.0277 | 0.0280 | 0.0280 | 0.0282 | 0.0280 | 0.0277 | 0.0278 | 0.0279 |
| 540 | 0.0284 | 0.0281 | 0.0281 | 0.0275 | 0.0280 | 0.0274 | 0.0276 | 0.0277 | 0.0280 | 0.0280 | 0.0282 | 0.0279 | 0.0277 | 0.0278 | 0.0279 |
| 550 | 0.0284 | 0.0281 | 0.0281 | 0.0275 | 0.0280 | 0.0274 | 0.0276 | 0.0277 | 0.0280 | 0.0280 | 0.0282 | 0.0279 | 0.0277 | 0.0278 | 0.0279 |
| 560 | 0.0284 | 0.0281 | 0.0281 | 0.0275 | 0.0279 | 0.0274 | 0.0276 | 0.0277 | 0.0280 | 0.0280 | 0.0282 | 0.0279 | 0.0277 | 0.0278 | 0.0279 |
| 570 | 0.0283 | 0.0281 | 0.0281 | 0.0275 | 0.0279 | 0.0274 | 0.0276 | 0.0276 | 0.0280 | 0.0280 | 0.0281 | 0.0279 | 0.0277 | 0.0278 | 0.0279 |
| 580 | 0.0283 | 0.0281 | 0.0281 | 0.0274 | 0.0279 | 0.0274 | 0.0276 | 0.0276 | 0.0280 | 0.0279 | 0.0281 | 0.0279 | 0.0277 | 0.0277 | 0.0279 |
| 590 | 0.0283 | 0.0281 | 0.0280 | 0.0274 | 0.0279 | 0.0274 | 0.0276 | 0.0276 | 0.0279 | 0.0279 | 0.0281 | 0.0279 | 0.0277 | 0.0277 | 0.0278 |
| 600 | 0.0283 | 0.0281 | 0.0280 | 0.0274 | 0.0279 | 0.0273 | 0.0275 | 0.0276 | 0.0279 | 0.0279 | 0.0281 | 0.0279 | 0.0276 | 0.0277 | 0.0278 |
| 610 | 0.0283 | 0.0280 | 0.0280 | 0.0274 | 0.0278 | 0.0273 | 0.0275 | 0.0276 | 0.0279 | 0.0279 | 0.0281 | 0.0278 | 0.0276 | 0.0277 | 0.0278 |
| 620 | 0.0282 | 0.0280 | 0.0280 | 0.0274 | 0.0278 | 0.0273 | 0.0275 | 0.0275 | 0.0279 | 0.0279 | 0.0280 | 0.0278 | 0.0276 | 0.0277 | 0.0278 |
| 630 | 0.0282 | 0.0280 | 0.0280 | 0.0273 | 0.0278 | 0.0273 | 0.0275 | 0.0275 | 0.0278 | 0.0278 | 0.0280 | 0.0278 | 0.0276 | 0.0276 | 0.0278 |
| 640 | 0.0282 | 0.0280 | 0.0279 | 0.0273 | 0.0278 | 0.0272 | 0.0274 | 0.0275 | 0.0278 | 0.0278 | 0.0280 | 0.0278 | 0.0275 | 0.0276 | 0.0277 |
| 650 | 0.0282 | 0.0279 | 0.0279 | 0.0273 | 0.0277 | 0.0272 | 0.0274 | 0.0275 | 0.0278 | 0.0278 | 0.0280 | 0.0277 | 0.0275 | 0.0276 | 0.0277 |
| 660 | 0.0281 | 0.0279 | 0.0279 | 0.0272 | 0.0277 | 0.0272 | 0.0274 | 0.0274 | 0.0278 | 0.0277 | 0.0279 | 0.0277 | 0.0275 | 0.0275 | 0.0277 |
| 670 | 0.0281 | 0.0279 | 0.0278 | 0.0272 | 0.0277 | 0.0272 | 0.0274 | 0.0274 | 0.0277 | 0.0277 | 0.0279 | 0.0277 | 0.0275 | 0.0275 | 0.0276 |
| 680 | 0.0281 | 0.0278 | 0.0278 | 0.0272 | 0.0277 | 0.0271 | 0.0273 | 0.0274 | 0.0277 | 0.0277 | 0.0279 | 0.0276 | 0.0274 | 0.0275 | 0.0276 |
| 690 | 0.0280 | 0.0278 | 0.0278 | 0.0272 | 0.0276 | 0.0271 | 0.0273 | 0.0274 | 0.0277 | 0.0277 | 0.0278 | 0.0276 | 0.0274 | 0.0275 | 0.0276 |
| 700 | 0.0280 | 0.0278 | 0.0277 | 0.0271 | 0.0276 | 0.0271 | 0.0273 | 0.0273 | 0.0276 | 0.0276 | 0.0278 | 0.0276 | 0.0274 | 0.0274 | 0.0275 |
| 710 | 0.0280 | 0.0277 | 0.0277 | 0.0271 | 0.0276 | 0.0270 | 0.0272 | 0.0273 | 0.0276 | 0.0276 | 0.0278 | 0.0275 | 0.0273 | 0.0274 | 0.0275 |
| 720 | 0.0279 | 0.0277 | 0.0277 | 0.0271 | 0.0275 | 0.0270 | 0.0272 | 0.0273 | 0.0276 | 0.0276 | 0.0277 | 0.0275 | 0.0273 | 0.0274 | 0.0275 |
| 730 | 0.0279 | 0.0277 | 0.0276 | 0.0270 | 0.0275 | 0.0270 | 0.0272 | 0.0272 | 0.0275 | 0.0275 | 0.0277 | 0.0275 | 0.0273 | 0.0273 | 0.0274 |
| 740 | 0.0279 | 0.0276 | 0.0276 | 0.0270 | 0.0275 | 0.0269 | 0.0271 | 0.0272 | 0.0275 | 0.0275 | 0.0277 | 0.0274 | 0.0272 | 0.0273 | 0.0274 |
| 750 | 0.0278 | 0.0276 | 0.0276 | 0.0270 | 0.0274 | 0.0269 | 0.0271 | 0.0271 | 0.0275 | 0.0274 | 0.0276 | 0.0274 | 0.0272 | 0.0272 | 0.0274 |
| 760 | 0.0278 | 0.0276 | 0.0275 | 0.0269 | 0.0274 | 0.0269 | 0.0271 | 0.0271 | 0.0274 | 0.0274 | 0.0276 | 0.0274 | 0.0271 | 0.0272 | 0.0273 |
| 770 | 0.0278 | 0.0275 | 0.0275 | 0.0269 | 0.0273 | 0.0268 | 0.0270 | 0.0271 | 0.0274 | 0.0274 | 0.0275 | 0.0273 | 0.0271 | 0.0272 | 0.0273 |
| 780 | 0.0277 | 0.0275 | 0.0275 | 0.0268 | 0.0273 | 0.0268 | 0.0270 | 0.0270 | 0.0273 | 0.0273 | 0.0275 | 0.0273 | 0.0271 | 0.0271 | 0.0273 |
| 790 | 0.0277 | 0.0274 | 0.0274 | 0.0268 | 0.0273 | 0.0267 | 0.0269 | 0.0270 | 0.0273 | 0.0273 | 0.0275 | 0.0272 | 0.0270 | 0.0271 | 0.0272 |
| 800 | 0.0276 | 0.0274 | 0.0274 | 0.0268 | 0.0272 | 0.0267 | 0.0269 | 0.0270 | 0.0273 | 0.0273 | 0.0274 | 0.0272 | 0.0270 | 0.0271 | 0.0272 |
| 810 | 0.0276 | 0.0274 | 0.0273 | 0.0267 | 0.0272 | 0.0267 | 0.0269 | 0.0269 | 0.0272 | 0.0272 | 0.0274 | 0.0272 | 0.0270 | 0.0270 | 0.0271 |
| 820 | 0.0275 | 0.0273 | 0.0273 | 0.0267 | 0.0271 | 0.0266 | 0.0268 | 0.0269 | 0.0272 | 0.0272 | 0.0273 | 0.0271 | 0.0269 | 0.0270 | 0.0271 |
| 830 | 0.0275 | 0.0273 | 0.0272 | 0.0266 | 0.0271 | 0.0266 | 0.0268 | 0.0268 | 0.0271 | 0.0271 | 0.0273 | 0.0271 | 0.0269 | 0.0269 | 0.0271 |
| 840 | 0.0275 | 0.0272 | 0.0272 | 0.0266 | 0.0271 | 0.0265 | 0.0267 | 0.0268 | 0.0271 | 0.0271 | 0.0273 | 0.0270 | 0.0268 | 0.0269 | 0.0270 |
| 850 | 0.0274 | 0.0272 | 0.0272 | 0.0266 | 0.0270 | 0.0265 | 0.0267 | 0.0267 | 0.0271 | 0.0270 | 0.0272 | 0.0270 | 0.0268 | 0.0269 | 0.0270 |
| 860 | 0.0274 | 0.0271 | 0.0271 | 0.0265 | 0.0270 | 0.0265 | 0.0267 | 0.0267 | 0.0270 | 0.0270 | 0.0272 | 0.0270 | 0.0267 | 0.0268 | 0.0269 |
| 870 | 0.0273 | 0.0271 | 0.0271 | 0.0265 | 0.0269 | 0.0264 | 0.0266 | 0.0267 | 0.0270 | 0.0270 | 0.0271 | 0.0269 | 0.0267 | 0.0268 | 0.0269 |
| 880 | 0.0273 | 0.0271 | 0.0270 | 0.0264 | 0.0269 | 0.0264 | 0.0266 | 0.0266 | 0.0269 | 0.0269 | 0.0271 | 0.0269 | 0.0267 | 0.0267 | 0.0268 |
| 890 | 0.0272 | 0.0270 | 0.0270 | 0.0264 | 0.0268 | 0.0263 | 0.0265 | 0.0266 | 0.0269 | 0.0269 | 0.0270 | 0.0268 | 0.0266 | 0.0267 | 0.0268 |
| 900 | 0.0272 | 0.0270 | 0.0269 | 0.0263 | 0.0268 | 0.0263 | 0.0265 | 0.0265 | 0.0268 | 0.0268 | 0.0270 | 0.0268 | 0.0266 | 0.0266 | 0.0268 |
| 910 | 0.0272 | 0.0269 | 0.0269 | 0.0263 | 0.0268 | 0.0262 | 0.0264 | 0.0265 | 0.0268 | 0.0268 | 0.0270 | 0.0267 | 0.0265 | 0.0266 | 0.0267 |
| 920 | 0.0271 | 0.0269 | 0.0269 | 0.0263 | 0.0267 | 0.0262 | 0.0264 | 0.0264 | 0.0267 | 0.0267 | 0.0269 | 0.0267 | 0.0265 | 0.0265 | 0.0267 |
| 930 | 0.0271 | 0.0268 | 0.0268 | 0.0262 | 0.0267 | 0.0262 | 0.0264 | 0.0264 | 0.0267 | 0.0267 | 0.0269 | 0.0266 | 0.0264 | 0.0265 | 0.0266 |
| 940 | 0.0270 | 0.0268 | 0.0268 | 0.0262 | 0.0266 | 0.0261 | 0.0263 | 0.0264 | 0.0267 | 0.0266 | 0.0268 | 0.0266 | 0.0264 | 0.0265 | 0.0266 |

TABLE 3. Compton component of the mass-energy absorption coefficient (cm/g) in the energy region 1 keV–1 MeV—Continued

| <i>E</i> (keV) | Ga | Ge | S | Se | Br | Kr | Rb | Sr | Y | Zr | Nb | Mo | Tc | Ru | Rh |
|----------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 950 | 0.0270 | 0.0267 | 0.0267 | 0.0261 | 0.0266 | 0.0261 | 0.0263 | 0.0263 | 0.0266 | 0.0266 | 0.0268 | 0.0266 | 0.0264 | 0.0264 | 0.0265 |
| 960 | 0.0269 | 0.0267 | 0.0267 | 0.0261 | 0.0265 | 0.0260 | 0.0262 | 0.0263 | 0.0266 | 0.0266 | 0.0267 | 0.0265 | 0.0263 | 0.0264 | 0.0265 |
| 970 | 0.0269 | 0.0267 | 0.0266 | 0.0260 | 0.0265 | 0.0260 | 0.0262 | 0.0262 | 0.0265 | 0.0265 | 0.0267 | 0.0265 | 0.0263 | 0.0263 | 0.0264 |
| 980 | 0.0268 | 0.0266 | 0.0266 | 0.0260 | 0.0264 | 0.0259 | 0.0261 | 0.0262 | 0.0265 | 0.0265 | 0.0266 | 0.0264 | 0.0262 | 0.0263 | 0.0264 |
| 990 | 0.0268 | 0.0266 | 0.0265 | 0.0259 | 0.0264 | 0.0259 | 0.0261 | 0.0261 | 0.0264 | 0.0264 | 0.0266 | 0.0264 | 0.0262 | 0.0262 | 0.0264 |
| 1000 | 0.0267 | 0.0265 | 0.0265 | 0.0259 | 0.0263 | 0.0258 | 0.0260 | 0.0261 | 0.0264 | 0.0264 | 0.0265 | 0.0263 | 0.0261 | 0.0262 | 0.0263 |
| <i>E</i> (keV) | Pd | Ag | Cd | In | Sn | Sb | Te | I | Xe | Cs | Ba | La | Ce | Pr | Nd |
| 1 | 0.0004 | 0.0004 | 0.0004 | 0.0004 | 0.0004 | 0.0004 | 0.0003 | 0.0003 | 0.0003 | 0.0003 | 0.0003 | 0.0003 | 0.0003 | 0.0003 | 0.0003 |
| 2 | 0.0007 | 0.0007 | 0.0007 | 0.0007 | 0.0007 | 0.0007 | 0.0007 | 0.0007 | 0.0007 | 0.0007 | 0.0007 | 0.0007 | 0.0007 | 0.0007 | 0.0007 |
| 3 | 0.0011 | 0.0011 | 0.0011 | 0.0011 | 0.0010 | 0.0010 | 0.0010 | 0.0010 | 0.0010 | 0.0010 | 0.0010 | 0.0010 | 0.0010 | 0.0010 | 0.0010 |
| 4 | 0.0014 | 0.0014 | 0.0014 | 0.0014 | 0.0014 | 0.0014 | 0.0013 | 0.0014 | 0.0013 | 0.0014 | 0.0013 | 0.0013 | 0.0014 | 0.0014 | 0.0014 |
| 5 | 0.0017 | 0.0018 | 0.0017 | 0.0017 | 0.0017 | 0.0017 | 0.0016 | 0.0017 | 0.0017 | 0.0017 | 0.0016 | 0.0017 | 0.0017 | 0.0017 | 0.0017 |
| 6 | 0.0021 | 0.0021 | 0.0021 | 0.0021 | 0.0020 | 0.0020 | 0.0020 | 0.0020 | 0.0020 | 0.0020 | 0.0020 | 0.0020 | 0.0020 | 0.0020 | 0.0020 |
| 7 | 0.0024 | 0.0024 | 0.0024 | 0.0024 | 0.0023 | 0.0023 | 0.0023 | 0.0023 | 0.0023 | 0.0023 | 0.0023 | 0.0023 | 0.0023 | 0.0023 | 0.0023 |
| 8 | 0.0027 | 0.0028 | 0.0027 | 0.0027 | 0.0027 | 0.0026 | 0.0026 | 0.0026 | 0.0026 | 0.0026 | 0.0026 | 0.0026 | 0.0026 | 0.0026 | 0.0026 |
| 9 | 0.0031 | 0.0031 | 0.0030 | 0.0030 | 0.0030 | 0.0030 | 0.0029 | 0.0029 | 0.0029 | 0.0029 | 0.0029 | 0.0029 | 0.0029 | 0.0030 | 0.0029 |
| 10 | 0.0034 | 0.0034 | 0.0033 | 0.0033 | 0.0033 | 0.0033 | 0.0032 | 0.0032 | 0.0032 | 0.0032 | 0.0032 | 0.0032 | 0.0032 | 0.0033 | 0.0032 |
| 20 | 0.0062 | 0.0063 | 0.0062 | 0.0062 | 0.0061 | 0.0060 | 0.0059 | 0.0060 | 0.0059 | 0.0060 | 0.0059 | 0.0059 | 0.0060 | 0.0060 | 0.0060 |
| 30 | 0.0087 | 0.0088 | 0.0086 | 0.0086 | 0.0085 | 0.0084 | 0.0082 | 0.0084 | 0.0083 | 0.0083 | 0.0082 | 0.0083 | 0.0083 | 0.0084 | 0.0084 |
| 40 | 0.0108 | 0.0109 | 0.0107 | 0.0107 | 0.0106 | 0.0105 | 0.0102 | 0.0105 | 0.0103 | 0.0104 | 0.0102 | 0.0103 | 0.0104 | 0.0105 | 0.0104 |
| 50 | 0.0127 | 0.0128 | 0.0125 | 0.0125 | 0.0124 | 0.0123 | 0.0120 | 0.0123 | 0.0121 | 0.0121 | 0.0120 | 0.0120 | 0.0121 | 0.0123 | 0.0122 |
| 60 | 0.0143 | 0.0144 | 0.0141 | 0.0141 | 0.0139 | 0.0139 | 0.0135 | 0.0138 | 0.0136 | 0.0137 | 0.0135 | 0.0136 | 0.0137 | 0.0138 | 0.0138 |
| 70 | 0.0157 | 0.0158 | 0.0155 | 0.0155 | 0.0153 | 0.0152 | 0.0148 | 0.0152 | 0.0149 | 0.0150 | 0.0148 | 0.0149 | 0.0150 | 0.0152 | 0.0151 |
| 80 | 0.0170 | 0.0171 | 0.0167 | 0.0167 | 0.0165 | 0.0164 | 0.0160 | 0.0164 | 0.0161 | 0.0162 | 0.0160 | 0.0161 | 0.0162 | 0.0164 | 0.0163 |
| 90 | 0.0181 | 0.0182 | 0.0178 | 0.0178 | 0.0176 | 0.0175 | 0.0170 | 0.0174 | 0.0172 | 0.0173 | 0.0170 | 0.0171 | 0.0173 | 0.0175 | 0.0174 |
| 100 | 0.0190 | 0.0192 | 0.0188 | 0.0188 | 0.0185 | 0.0184 | 0.0179 | 0.0184 | 0.0181 | 0.0182 | 0.0179 | 0.0181 | 0.0182 | 0.0184 | 0.0183 |
| 110 | 0.0199 | 0.0200 | 0.0197 | 0.0196 | 0.0194 | 0.0193 | 0.0188 | 0.0192 | 0.0189 | 0.0190 | 0.0188 | 0.0189 | 0.0190 | 0.0193 | 0.0191 |
| 120 | 0.0207 | 0.0208 | 0.0204 | 0.0204 | 0.0201 | 0.0200 | 0.0195 | 0.0200 | 0.0197 | 0.0198 | 0.0195 | 0.0196 | 0.0198 | 0.0200 | 0.0199 |
| 130 | 0.0214 | 0.0215 | 0.0211 | 0.0211 | 0.0208 | 0.0207 | 0.0201 | 0.0206 | 0.0203 | 0.0204 | 0.0201 | 0.0203 | 0.0204 | 0.0207 | 0.0205 |
| 140 | 0.0220 | 0.0222 | 0.0217 | 0.0217 | 0.0214 | 0.0213 | 0.0207 | 0.0212 | 0.0209 | 0.0210 | 0.0207 | 0.0209 | 0.0210 | 0.0213 | 0.0211 |
| 150 | 0.0225 | 0.0227 | 0.0223 | 0.0222 | 0.0220 | 0.0218 | 0.0212 | 0.0218 | 0.0214 | 0.0216 | 0.0213 | 0.0214 | 0.0216 | 0.0218 | 0.0217 |
| 160 | 0.0230 | 0.0232 | 0.0228 | 0.0227 | 0.0224 | 0.0223 | 0.0217 | 0.0223 | 0.0219 | 0.0221 | 0.0217 | 0.0219 | 0.0221 | 0.0223 | 0.0222 |
| 170 | 0.0235 | 0.0237 | 0.0232 | 0.0232 | 0.0229 | 0.0228 | 0.0221 | 0.0227 | 0.0223 | 0.0225 | 0.0222 | 0.0223 | 0.0225 | 0.0228 | 0.0226 |
| 180 | 0.0239 | 0.0241 | 0.0236 | 0.0236 | 0.0233 | 0.0232 | 0.0225 | 0.0231 | 0.0227 | 0.0229 | 0.0225 | 0.0227 | 0.0229 | 0.0231 | 0.0230 |
| 190 | 0.0243 | 0.0245 | 0.0240 | 0.0240 | 0.0237 | 0.0235 | 0.0229 | 0.0234 | 0.0231 | 0.0232 | 0.0229 | 0.0230 | 0.0232 | 0.0235 | 0.0234 |
| 200 | 0.0246 | 0.0248 | 0.0243 | 0.0243 | 0.0240 | 0.0238 | 0.0232 | 0.0238 | 0.0234 | 0.0236 | 0.0232 | 0.0234 | 0.0236 | 0.0238 | 0.0237 |
| 210 | 0.0249 | 0.0251 | 0.0246 | 0.0246 | 0.0243 | 0.0241 | 0.0235 | 0.0241 | 0.0237 | 0.0238 | 0.0235 | 0.0236 | 0.0239 | 0.0241 | 0.0240 |
| 220 | 0.0252 | 0.0254 | 0.0249 | 0.0249 | 0.0245 | 0.0244 | 0.0237 | 0.0243 | 0.0240 | 0.0241 | 0.0238 | 0.0239 | 0.0241 | 0.0244 | 0.0242 |
| 230 | 0.0254 | 0.0256 | 0.0251 | 0.0251 | 0.0248 | 0.0247 | 0.0240 | 0.0246 | 0.0242 | 0.0244 | 0.0240 | 0.0242 | 0.0244 | 0.0246 | 0.0245 |
| 240 | 0.0257 | 0.0259 | 0.0254 | 0.0253 | 0.0250 | 0.0249 | 0.0242 | 0.0248 | 0.0244 | 0.0246 | 0.0242 | 0.0244 | 0.0246 | 0.0249 | 0.0247 |
| 250 | 0.0259 | 0.0261 | 0.0256 | 0.0255 | 0.0252 | 0.0251 | 0.0244 | 0.0250 | 0.0246 | 0.0248 | 0.0244 | 0.0246 | 0.0248 | 0.0251 | 0.0249 |
| 260 | 0.0261 | 0.0263 | 0.0257 | 0.0257 | 0.0254 | 0.0253 | 0.0246 | 0.0252 | 0.0248 | 0.0250 | 0.0246 | 0.0247 | 0.0250 | 0.0252 | 0.0251 |
| 270 | 0.0262 | 0.0264 | 0.0259 | 0.0259 | 0.0256 | 0.0254 | 0.0247 | 0.0254 | 0.0250 | 0.0251 | 0.0247 | 0.0249 | 0.0251 | 0.0254 | 0.0252 |
| 280 | 0.0264 | 0.0266 | 0.0261 | 0.0261 | 0.0257 | 0.0256 | 0.0249 | 0.0255 | 0.0251 | 0.0253 | 0.0249 | 0.0251 | 0.0253 | 0.0256 | 0.0254 |
| 290 | 0.0265 | 0.0267 | 0.0262 | 0.0262 | 0.0259 | 0.0257 | 0.0250 | 0.0256 | 0.0252 | 0.0254 | 0.0250 | 0.0252 | 0.0254 | 0.0257 | 0.0255 |
| 300 | 0.0267 | 0.0269 | 0.0263 | 0.0263 | 0.0260 | 0.0258 | 0.0251 | 0.0258 | 0.0254 | 0.0255 | 0.0252 | 0.0253 | 0.0255 | 0.0258 | 0.0257 |
| 310 | 0.0268 | 0.0270 | 0.0265 | 0.0264 | 0.0261 | 0.0260 | 0.0253 | 0.0259 | 0.0255 | 0.0256 | 0.0253 | 0.0254 | 0.0256 | 0.0259 | 0.0258 |
| 320 | 0.0269 | 0.0271 | 0.0266 | 0.0265 | 0.0262 | 0.0261 | 0.0254 | 0.0260 | 0.0256 | 0.0257 | 0.0254 | 0.0255 | 0.0257 | 0.0260 | 0.0259 |
| 330 | 0.0270 | 0.0272 | 0.0267 | 0.0266 | 0.0263 | 0.0262 | 0.0254 | 0.0261 | 0.0257 | 0.0258 | 0.0255 | 0.0256 | 0.0258 | 0.0261 | 0.0260 |
| 340 | 0.0271 | 0.0273 | 0.0267 | 0.0267 | 0.0264 | 0.0262 | 0.0255 | 0.0262 | 0.0258 | 0.0259 | 0.0255 | 0.0257 | 0.0259 | 0.0262 | 0.0261 |
| 350 | 0.0272 | 0.0274 | 0.0268 | 0.0268 | 0.0265 | 0.0263 | 0.0256 | 0.0262 | 0.0258 | 0.0260 | 0.0256 | 0.0258 | 0.0260 | 0.0263 | 0.0261 |
| 360 | 0.0272 | 0.0274 | 0.0269 | 0.0269 | 0.0265 | 0.0264 | 0.0257 | 0.0263 | 0.0259 | 0.0261 | 0.0257 | 0.0258 | 0.0261 | 0.0264 | 0.0262 |
| 370 | 0.0273 | 0.0275 | 0.0270 | 0.0269 | 0.0266 | 0.0264 | 0.0257 | 0.0264 | 0.0260 | 0.0261 | 0.0257 | 0.0259 | 0.0261 | 0.0264 | 0.0263 |
| 380 | 0.0273 | 0.0276 | 0.0270 | 0.0270 | 0.0266 | 0.0265 | 0.0258 | 0.0264 | 0.0260 | 0.0262 | 0.0258 | 0.0260 | 0.0262 | 0.0265 | 0.0263 |
| 390 | 0.0274 | 0.0276 | 0.0271 | 0.0270 | 0.0267 | 0.0265 | 0.0258 | 0.0265 | 0.0261 | 0.0262 | 0.0258 | 0.0260 | 0.0262 | 0.0265 | 0.0264 |
| 400 | 0.0274 | 0.0277 | 0.0271 | 0.0271 | 0.0267 | 0.0266 | 0.0259 | 0.0265 | 0.0261 | 0.0263 | 0.0259 | 0.0260 | 0.0263 | 0.0266 | 0.0264 |
| 410 | 0.0275 | 0.0277 | 0.0271 | 0.0271 | 0.0268 | 0.0266 | 0.0259 | 0.0265 | 0.0261 | 0.0263 | 0.0259 | 0.0261 | 0.0263 | 0.0266 | 0.0264 |
| 420 | 0.0275 | 0.0277 | 0.0272 | 0.0272 | 0.0268 | 0.0267 | 0.0259 | 0.0266 | 0.0262 | 0.0263 | 0.0259 | 0.0261 | 0.0263 | 0.0266 | 0.0265 |
| 430 | 0.0275 | 0.0278 | 0.0272 | 0.0272 | 0.0268 | 0.0267 | 0.0260 | 0.0266 | 0.0262 | 0.0264 | 0.0260 | 0.0261 | 0.0264 | 0.0267 | 0.0265 |
| 440 | 0.0276 | 0.0278 | 0.0272 | 0.0272 | 0.0269 | 0.0267 | 0.0260 | 0.0266 | 0.0262 | 0.0264 | 0.0260 | 0.0262 | 0.0264 | 0.0267 | 0.0265 |
| 450 | 0.0276 | 0.0278 | 0.0272 | 0.0272 | 0.0269 | 0.0267 | 0.0260 | 0.0266 | 0.0262 | 0.0264 | 0.0260 | 0.0262 | 0.0264 | 0.0267 | 0.0265 |
| 460 | 0.0276 | 0.0278 | 0.0273 | 0.0272 | 0.0269 | 0.0267 | 0.0260 | 0.0267 | 0.0263 | 0.0264 | 0.0260 | 0.0262 | 0.0264 | 0.0267 | 0.0265 |
| 470 | 0.0276 | 0.0278 | 0.0273 | 0.0272 | 0.0269 | 0.0268 | 0.0260 | 0.0267 | 0.0263 | 0.0264 | 0.0260 | 0.0262 | 0.0264 | 0.0267 | 0.0266 |
| 480 | 0.0276 | 0.0278 | 0.0273 | 0.0273 | 0.0269 | 0.0268 | 0.0260 | 0.0267 | 0.0263 | 0.0264 | 0.0260 | 0.0262 | 0.0264 | 0.0267 | 0.0266 |

TABLE 3. Compton component of the mass-energy absorption coefficient (cm/g) in the energy region 1 keV–1 MeV—Continued

| E(keV) | Pd | Ag | Cd | In | Sn | Sb | Te | I | Xe | Cs | Ba | La | Ce | Pr | Nd |
|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 490 | 0.0276 | 0.0278 | 0.0273 | 0.0273 | 0.0269 | 0.0268 | 0.0260 | 0.0267 | 0.0263 | 0.0264 | 0.0260 | 0.0262 | 0.0264 | 0.0267 | 0.0266 |
| 500 | 0.0276 | 0.0278 | 0.0273 | 0.0273 | 0.0269 | 0.0268 | 0.0260 | 0.0267 | 0.0263 | 0.0264 | 0.0261 | 0.0262 | 0.0264 | 0.0268 | 0.0266 |
| 510 | 0.0276 | 0.0278 | 0.0273 | 0.0273 | 0.0269 | 0.0268 | 0.0260 | 0.0267 | 0.0263 | 0.0264 | 0.0260 | 0.0262 | 0.0264 | 0.0268 | 0.0266 |
| 520 | 0.0276 | 0.0278 | 0.0273 | 0.0273 | 0.0269 | 0.0268 | 0.0260 | 0.0267 | 0.0263 | 0.0264 | 0.0260 | 0.0262 | 0.0264 | 0.0267 | 0.0266 |
| 530 | 0.0276 | 0.0278 | 0.0273 | 0.0273 | 0.0269 | 0.0268 | 0.0260 | 0.0267 | 0.0263 | 0.0264 | 0.0260 | 0.0262 | 0.0264 | 0.0267 | 0.0266 |
| 540 | 0.0276 | 0.0278 | 0.0273 | 0.0272 | 0.0269 | 0.0267 | 0.0260 | 0.0267 | 0.0263 | 0.0264 | 0.0260 | 0.0262 | 0.0264 | 0.0267 | 0.0266 |
| 550 | 0.0276 | 0.0278 | 0.0273 | 0.0272 | 0.0269 | 0.0267 | 0.0260 | 0.0267 | 0.0262 | 0.0264 | 0.0260 | 0.0262 | 0.0264 | 0.0267 | 0.0265 |
| 560 | 0.0276 | 0.0278 | 0.0272 | 0.0272 | 0.0269 | 0.0267 | 0.0260 | 0.0266 | 0.0262 | 0.0264 | 0.0260 | 0.0262 | 0.0264 | 0.0267 | 0.0265 |
| 570 | 0.0276 | 0.0278 | 0.0272 | 0.0272 | 0.0269 | 0.0267 | 0.0260 | 0.0266 | 0.0262 | 0.0264 | 0.0260 | 0.0262 | 0.0264 | 0.0267 | 0.0265 |
| 580 | 0.0275 | 0.0278 | 0.0272 | 0.0272 | 0.0268 | 0.0267 | 0.0260 | 0.0266 | 0.0262 | 0.0264 | 0.0260 | 0.0261 | 0.0264 | 0.0267 | 0.0265 |
| 590 | 0.0275 | 0.0277 | 0.0272 | 0.0272 | 0.0268 | 0.0267 | 0.0260 | 0.0266 | 0.0262 | 0.0263 | 0.0260 | 0.0261 | 0.0264 | 0.0267 | 0.0265 |
| 600 | 0.0275 | 0.0277 | 0.0272 | 0.0272 | 0.0268 | 0.0267 | 0.0259 | 0.0266 | 0.0262 | 0.0263 | 0.0259 | 0.0261 | 0.0263 | 0.0266 | 0.0265 |
| 610 | 0.0275 | 0.0277 | 0.0272 | 0.0271 | 0.0268 | 0.0266 | 0.0259 | 0.0266 | 0.0261 | 0.0263 | 0.0259 | 0.0261 | 0.0263 | 0.0266 | 0.0264 |
| 620 | 0.0275 | 0.0277 | 0.0271 | 0.0271 | 0.0268 | 0.0266 | 0.0259 | 0.0265 | 0.0261 | 0.0263 | 0.0259 | 0.0261 | 0.0263 | 0.0266 | 0.0264 |
| 630 | 0.0274 | 0.0277 | 0.0271 | 0.0271 | 0.0267 | 0.0266 | 0.0259 | 0.0265 | 0.0261 | 0.0263 | 0.0259 | 0.0260 | 0.0263 | 0.0266 | 0.0264 |
| 640 | 0.0274 | 0.0276 | 0.0271 | 0.0271 | 0.0267 | 0.0266 | 0.0258 | 0.0265 | 0.0261 | 0.0262 | 0.0259 | 0.0260 | 0.0262 | 0.0265 | 0.0264 |
| 650 | 0.0274 | 0.0276 | 0.0271 | 0.0270 | 0.0267 | 0.0265 | 0.0258 | 0.0265 | 0.0261 | 0.0262 | 0.0258 | 0.0260 | 0.0262 | 0.0265 | 0.0263 |
| 660 | 0.0274 | 0.0276 | 0.0270 | 0.0270 | 0.0267 | 0.0265 | 0.0258 | 0.0264 | 0.0260 | 0.0262 | 0.0258 | 0.0260 | 0.0262 | 0.0265 | 0.0263 |
| 670 | 0.0273 | 0.0275 | 0.0270 | 0.0270 | 0.0266 | 0.0265 | 0.0258 | 0.0264 | 0.0260 | 0.0262 | 0.0258 | 0.0259 | 0.0262 | 0.0265 | 0.0263 |
| 680 | 0.0273 | 0.0275 | 0.0270 | 0.0269 | 0.0266 | 0.0265 | 0.0257 | 0.0264 | 0.0260 | 0.0261 | 0.0257 | 0.0259 | 0.0261 | 0.0264 | 0.0263 |
| 690 | 0.0273 | 0.0275 | 0.0269 | 0.0269 | 0.0266 | 0.0264 | 0.0257 | 0.0263 | 0.0259 | 0.0261 | 0.0257 | 0.0259 | 0.0261 | 0.0264 | 0.0262 |
| 700 | 0.0272 | 0.0274 | 0.0269 | 0.0269 | 0.0265 | 0.0264 | 0.0257 | 0.0263 | 0.0259 | 0.0261 | 0.0257 | 0.0259 | 0.0261 | 0.0264 | 0.0262 |
| 710 | 0.0272 | 0.0274 | 0.0269 | 0.0268 | 0.0265 | 0.0264 | 0.0256 | 0.0263 | 0.0259 | 0.0260 | 0.0257 | 0.0258 | 0.0260 | 0.0263 | 0.0262 |
| 720 | 0.0272 | 0.0274 | 0.0268 | 0.0268 | 0.0265 | 0.0263 | 0.0256 | 0.0262 | 0.0258 | 0.0260 | 0.0256 | 0.0258 | 0.0260 | 0.0263 | 0.0261 |
| 730 | 0.0271 | 0.0273 | 0.0268 | 0.0268 | 0.0264 | 0.0263 | 0.0256 | 0.0262 | 0.0258 | 0.0260 | 0.0256 | 0.0258 | 0.0260 | 0.0263 | 0.0261 |
| 740 | 0.0271 | 0.0273 | 0.0268 | 0.0267 | 0.0264 | 0.0263 | 0.0255 | 0.0262 | 0.0258 | 0.0259 | 0.0256 | 0.0257 | 0.0259 | 0.0262 | 0.0261 |
| 750 | 0.0271 | 0.0273 | 0.0267 | 0.0267 | 0.0264 | 0.0262 | 0.0255 | 0.0261 | 0.0257 | 0.0259 | 0.0255 | 0.0257 | 0.0259 | 0.0262 | 0.0260 |
| 760 | 0.0270 | 0.0272 | 0.0267 | 0.0267 | 0.0263 | 0.0262 | 0.0255 | 0.0261 | 0.0257 | 0.0259 | 0.0255 | 0.0257 | 0.0259 | 0.0262 | 0.0260 |
| 770 | 0.0270 | 0.0272 | 0.0267 | 0.0266 | 0.0263 | 0.0261 | 0.0254 | 0.0261 | 0.0257 | 0.0258 | 0.0254 | 0.0256 | 0.0258 | 0.0261 | 0.0260 |
| 780 | 0.0269 | 0.0272 | 0.0266 | 0.0266 | 0.0263 | 0.0261 | 0.0254 | 0.0260 | 0.0256 | 0.0258 | 0.0254 | 0.0256 | 0.0258 | 0.0261 | 0.0259 |
| 790 | 0.0269 | 0.0271 | 0.0266 | 0.0266 | 0.0262 | 0.0261 | 0.0254 | 0.0260 | 0.0256 | 0.0258 | 0.0254 | 0.0255 | 0.0258 | 0.0261 | 0.0259 |
| 800 | 0.0269 | 0.0271 | 0.0265 | 0.0265 | 0.0262 | 0.0260 | 0.0253 | 0.0260 | 0.0256 | 0.0257 | 0.0253 | 0.0255 | 0.0257 | 0.0260 | 0.0258 |
| 810 | 0.0268 | 0.0270 | 0.0265 | 0.0265 | 0.0261 | 0.0260 | 0.0253 | 0.0259 | 0.0255 | 0.0257 | 0.0253 | 0.0255 | 0.0257 | 0.0260 | 0.0258 |
| 820 | 0.0268 | 0.0270 | 0.0265 | 0.0264 | 0.0261 | 0.0260 | 0.0253 | 0.0259 | 0.0255 | 0.0256 | 0.0253 | 0.0254 | 0.0256 | 0.0259 | 0.0258 |
| 830 | 0.0267 | 0.0270 | 0.0264 | 0.0264 | 0.0261 | 0.0259 | 0.0252 | 0.0258 | 0.0254 | 0.0256 | 0.0252 | 0.0254 | 0.0256 | 0.0259 | 0.0257 |
| 840 | 0.0267 | 0.0269 | 0.0264 | 0.0264 | 0.0260 | 0.0259 | 0.0252 | 0.0258 | 0.0254 | 0.0256 | 0.0252 | 0.0253 | 0.0256 | 0.0259 | 0.0257 |
| 850 | 0.0267 | 0.0269 | 0.0263 | 0.0263 | 0.0260 | 0.0258 | 0.0251 | 0.0258 | 0.0254 | 0.0255 | 0.0251 | 0.0253 | 0.0255 | 0.0258 | 0.0257 |
| 860 | 0.0266 | 0.0268 | 0.0263 | 0.0263 | 0.0259 | 0.0258 | 0.0251 | 0.0257 | 0.0253 | 0.0255 | 0.0251 | 0.0253 | 0.0255 | 0.0258 | 0.0256 |
| 870 | 0.0266 | 0.0268 | 0.0263 | 0.0262 | 0.0259 | 0.0258 | 0.0251 | 0.0257 | 0.0253 | 0.0254 | 0.0251 | 0.0252 | 0.0254 | 0.0257 | 0.0256 |
| 880 | 0.0265 | 0.0267 | 0.0262 | 0.0262 | 0.0259 | 0.0257 | 0.0250 | 0.0256 | 0.0252 | 0.0254 | 0.0250 | 0.0252 | 0.0254 | 0.0257 | 0.0255 |
| 890 | 0.0265 | 0.0267 | 0.0262 | 0.0262 | 0.0258 | 0.0257 | 0.0250 | 0.0256 | 0.0252 | 0.0254 | 0.0250 | 0.0251 | 0.0254 | 0.0257 | 0.0255 |
| 900 | 0.0264 | 0.0267 | 0.0261 | 0.0261 | 0.0258 | 0.0256 | 0.0249 | 0.0256 | 0.0252 | 0.0253 | 0.0249 | 0.0251 | 0.0253 | 0.0256 | 0.0254 |
| 910 | 0.0264 | 0.0266 | 0.0261 | 0.0261 | 0.0257 | 0.0256 | 0.0249 | 0.0255 | 0.0251 | 0.0253 | 0.0249 | 0.0251 | 0.0253 | 0.0256 | 0.0254 |
| 920 | 0.0264 | 0.0266 | 0.0260 | 0.0260 | 0.0257 | 0.0255 | 0.0249 | 0.0255 | 0.0251 | 0.0252 | 0.0249 | 0.0250 | 0.0252 | 0.0255 | 0.0254 |
| 930 | 0.0263 | 0.0265 | 0.0260 | 0.0260 | 0.0256 | 0.0255 | 0.0248 | 0.0254 | 0.0250 | 0.0252 | 0.0248 | 0.0250 | 0.0252 | 0.0255 | 0.0253 |
| 940 | 0.0263 | 0.0265 | 0.0260 | 0.0259 | 0.0256 | 0.0255 | 0.0248 | 0.0254 | 0.0250 | 0.0251 | 0.0248 | 0.0249 | 0.0252 | 0.0254 | 0.0253 |
| 950 | 0.0262 | 0.0264 | 0.0259 | 0.0259 | 0.0256 | 0.0254 | 0.0247 | 0.0253 | 0.0250 | 0.0251 | 0.0247 | 0.0249 | 0.0251 | 0.0254 | 0.0252 |
| 960 | 0.0262 | 0.0264 | 0.0259 | 0.0258 | 0.0255 | 0.0254 | 0.0247 | 0.0253 | 0.0249 | 0.0251 | 0.0247 | 0.0249 | 0.0251 | 0.0254 | 0.0252 |
| 970 | 0.0261 | 0.0263 | 0.0258 | 0.0258 | 0.0255 | 0.0253 | 0.0246 | 0.0253 | 0.0249 | 0.0250 | 0.0247 | 0.0248 | 0.0250 | 0.0253 | 0.0252 |
| 980 | 0.0261 | 0.0263 | 0.0258 | 0.0258 | 0.0254 | 0.0253 | 0.0246 | 0.0252 | 0.0248 | 0.0250 | 0.0246 | 0.0248 | 0.0250 | 0.0253 | 0.0251 |
| 990 | 0.0261 | 0.0263 | 0.0257 | 0.0257 | 0.0254 | 0.0252 | 0.0246 | 0.0252 | 0.0248 | 0.0249 | 0.0246 | 0.0247 | 0.0249 | 0.0252 | 0.0251 |
| 1000 | 0.0260 | 0.0262 | 0.0257 | 0.0257 | 0.0253 | 0.0252 | 0.0245 | 0.0251 | 0.0247 | 0.0249 | 0.0245 | 0.0247 | 0.0249 | 0.0252 | 0.0250 |
| E(keV) | Pm | Sm | Eu | Gd | Tb | Dy | Ho | Er | Tm | Yb | Lu | Hf | Ta | W | Re |
| 1 | 0.0004 | 0.0003 | 0.0003 | 0.0003 | 0.0003 | 0.0003 | 0.0003 | 0.0003 | 0.0003 | 0.0003 | 0.0003 | 0.0003 | 0.0003 | 0.0003 | 0.0003 |
| 2 | 0.0007 | 0.0007 | 0.0007 | 0.0007 | 0.0007 | 0.0007 | 0.0007 | 0.0007 | 0.0007 | 0.0007 | 0.0007 | 0.0007 | 0.0007 | 0.0007 | 0.0007 |
| 3 | 0.0010 | 0.0010 | 0.0010 | 0.0010 | 0.0010 | 0.0010 | 0.0010 | 0.0010 | 0.0010 | 0.0010 | 0.0010 | 0.0010 | 0.0010 | 0.0010 | 0.0010 |
| 4 | 0.0014 | 0.0013 | 0.0014 | 0.0013 | 0.0013 | 0.0013 | 0.0013 | 0.0013 | 0.0013 | 0.0013 | 0.0013 | 0.0013 | 0.0013 | 0.0013 | 0.0013 |
| 5 | 0.0017 | 0.0017 | 0.0017 | 0.0016 | 0.0017 | 0.0016 | 0.0016 | 0.0016 | 0.0017 | 0.0016 | 0.0016 | 0.0016 | 0.0016 | 0.0016 | 0.0016 |
| 6 | 0.0020 | 0.0020 | 0.0020 | 0.0020 | 0.0020 | 0.0020 | 0.0020 | 0.0020 | 0.0020 | 0.0019 | 0.0020 | 0.0019 | 0.0019 | 0.0019 | 0.0019 |
| 7 | 0.0023 | 0.0023 | 0.0023 | 0.0023 | 0.0023 | 0.0023 | 0.0023 | 0.0023 | 0.0023 | 0.0023 | 0.0023 | 0.0022 | 0.0022 | 0.0022 | 0.0022 |
| 8 | 0.0027 | 0.0026 | 0.0026 | 0.0026 | 0.0026 | 0.0026 | 0.0026 | 0.0026 | 0.0026 | 0.0026 | 0.0026 | 0.0025 | 0.0025 | 0.0025 | 0.0025 |
| 9 | 0.0030 | 0.0029 | 0.0029 | 0.0029 | 0.0029 | 0.0029 | 0.0029 | 0.0029 | 0.0029 | 0.0029 | 0.0029 | 0.0028 | 0.0028 | 0.0028 | 0.0028 |
| 10 | 0.0033 | 0.0032 | 0.0032 | 0.0032 | 0.0032 | 0.0032 | 0.0032 | 0.0032 | 0.0032 | 0.0031 | 0.0032 | 0.0031 | 0.0031 | 0.0031 | 0.0031 |
| 20 | 0.0061 | 0.0059 | 0.0060 | 0.0059 | 0.0059 | 0.0059 | 0.0059 | 0.0059 | 0.0059 | 0.0058 | 0.0059 | 0.0058 | 0.0058 | 0.0058 | 0.0058 |

TABLE 3. Compton component of the mass-energy absorption coefficient (cm/g) in the energy region 1 keV–1 MeV—Continued

| <i>E</i> (keV) | Pm | Sm | Eu | Gd | Tb | Dy | Ho | Er | Tm | Yb | Lu | Hf | Ta | W | Re |
|----------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 30 | 0.0085 | 0.0083 | 0.0083 | 0.0082 | 0.0082 | 0.0082 | 0.0082 | 0.0082 | 0.0082 | 0.0081 | 0.0082 | 0.0081 | 0.0081 | 0.0081 | 0.0081 |
| 40 | 0.0105 | 0.0103 | 0.0104 | 0.0102 | 0.0102 | 0.0102 | 0.0102 | 0.0102 | 0.0102 | 0.0101 | 0.0102 | 0.0101 | 0.0101 | 0.0101 | 0.0101 |
| 50 | 0.0123 | 0.0121 | 0.0122 | 0.0119 | 0.0120 | 0.0119 | 0.0119 | 0.0119 | 0.0120 | 0.0119 | 0.0119 | 0.0118 | 0.0118 | 0.0118 | 0.0118 |
| 60 | 0.0139 | 0.0136 | 0.0137 | 0.0135 | 0.0135 | 0.0134 | 0.0134 | 0.0134 | 0.0135 | 0.0134 | 0.0134 | 0.0133 | 0.0133 | 0.0133 | 0.0133 |
| 70 | 0.0153 | 0.0150 | 0.0151 | 0.0148 | 0.0149 | 0.0148 | 0.0148 | 0.0148 | 0.0148 | 0.0147 | 0.0147 | 0.0147 | 0.0147 | 0.0146 | 0.0146 |
| 80 | 0.0165 | 0.0162 | 0.0163 | 0.0160 | 0.0160 | 0.0159 | 0.0159 | 0.0159 | 0.0160 | 0.0159 | 0.0159 | 0.0158 | 0.0158 | 0.0158 | 0.0158 |
| 90 | 0.0176 | 0.0172 | 0.0173 | 0.0170 | 0.0171 | 0.0170 | 0.0170 | 0.0170 | 0.0171 | 0.0169 | 0.0169 | 0.0168 | 0.0168 | 0.0168 | 0.0168 |
| 100 | 0.0185 | 0.0182 | 0.0182 | 0.0179 | 0.0180 | 0.0179 | 0.0179 | 0.0179 | 0.0180 | 0.0178 | 0.0179 | 0.0178 | 0.0178 | 0.0177 | 0.0177 |
| 110 | 0.0194 | 0.0190 | 0.0191 | 0.0187 | 0.0188 | 0.0187 | 0.0187 | 0.0187 | 0.0188 | 0.0186 | 0.0187 | 0.0186 | 0.0186 | 0.0185 | 0.0185 |
| 120 | 0.0201 | 0.0197 | 0.0198 | 0.0195 | 0.0196 | 0.0194 | 0.0194 | 0.0194 | 0.0195 | 0.0193 | 0.0194 | 0.0193 | 0.0193 | 0.0192 | 0.0193 |
| 130 | 0.0208 | 0.0204 | 0.0205 | 0.0201 | 0.0202 | 0.0201 | 0.0201 | 0.0201 | 0.0202 | 0.0200 | 0.0200 | 0.0199 | 0.0199 | 0.0199 | 0.0199 |
| 140 | 0.0214 | 0.0210 | 0.0211 | 0.0207 | 0.0208 | 0.0206 | 0.0207 | 0.0207 | 0.0208 | 0.0206 | 0.0206 | 0.0205 | 0.0205 | 0.0205 | 0.0205 |
| 150 | 0.0219 | 0.0215 | 0.0216 | 0.0212 | 0.0213 | 0.0212 | 0.0212 | 0.0212 | 0.0213 | 0.0211 | 0.0212 | 0.0210 | 0.0210 | 0.0210 | 0.0210 |
| 160 | 0.0224 | 0.0220 | 0.0221 | 0.0217 | 0.0218 | 0.0216 | 0.0217 | 0.0217 | 0.0218 | 0.0216 | 0.0216 | 0.0215 | 0.0215 | 0.0215 | 0.0215 |
| 170 | 0.0229 | 0.0224 | 0.0225 | 0.0221 | 0.0222 | 0.0221 | 0.0221 | 0.0221 | 0.0222 | 0.0220 | 0.0220 | 0.0219 | 0.0219 | 0.0219 | 0.0219 |
| 180 | 0.0233 | 0.0228 | 0.0229 | 0.0225 | 0.0226 | 0.0225 | 0.0225 | 0.0225 | 0.0226 | 0.0224 | 0.0224 | 0.0223 | 0.0223 | 0.0223 | 0.0223 |
| 190 | 0.0236 | 0.0232 | 0.0233 | 0.0229 | 0.0230 | 0.0228 | 0.0228 | 0.0228 | 0.0229 | 0.0227 | 0.0228 | 0.0226 | 0.0226 | 0.0226 | 0.0226 |
| 200 | 0.0239 | 0.0235 | 0.0236 | 0.0232 | 0.0233 | 0.0231 | 0.0231 | 0.0231 | 0.0232 | 0.0230 | 0.0231 | 0.0230 | 0.0230 | 0.0229 | 0.0229 |
| 210 | 0.0242 | 0.0238 | 0.0239 | 0.0235 | 0.0236 | 0.0234 | 0.0234 | 0.0234 | 0.0235 | 0.0233 | 0.0234 | 0.0232 | 0.0232 | 0.0232 | 0.0232 |
| 220 | 0.0245 | 0.0240 | 0.0242 | 0.0237 | 0.0238 | 0.0237 | 0.0237 | 0.0237 | 0.0238 | 0.0236 | 0.0236 | 0.0235 | 0.0235 | 0.0235 | 0.0235 |
| 230 | 0.0248 | 0.0243 | 0.0244 | 0.0240 | 0.0241 | 0.0239 | 0.0239 | 0.0239 | 0.0240 | 0.0238 | 0.0239 | 0.0237 | 0.0237 | 0.0237 | 0.0237 |
| 240 | 0.0250 | 0.0245 | 0.0246 | 0.0242 | 0.0243 | 0.0241 | 0.0241 | 0.0241 | 0.0243 | 0.0240 | 0.0241 | 0.0240 | 0.0240 | 0.0239 | 0.0239 |
| 250 | 0.0252 | 0.0247 | 0.0248 | 0.0244 | 0.0245 | 0.0243 | 0.0243 | 0.0243 | 0.0244 | 0.0242 | 0.0243 | 0.0241 | 0.0241 | 0.0241 | 0.0241 |
| 260 | 0.0254 | 0.0249 | 0.0250 | 0.0245 | 0.0247 | 0.0245 | 0.0245 | 0.0245 | 0.0246 | 0.0244 | 0.0245 | 0.0243 | 0.0243 | 0.0243 | 0.0243 |
| 270 | 0.0255 | 0.0250 | 0.0252 | 0.0247 | 0.0248 | 0.0247 | 0.0247 | 0.0247 | 0.0248 | 0.0246 | 0.0246 | 0.0245 | 0.0245 | 0.0244 | 0.0244 |
| 280 | 0.0257 | 0.0252 | 0.0253 | 0.0249 | 0.0250 | 0.0248 | 0.0248 | 0.0248 | 0.0249 | 0.0247 | 0.0248 | 0.0246 | 0.0246 | 0.0246 | 0.0246 |
| 290 | 0.0258 | 0.0253 | 0.0254 | 0.0250 | 0.0251 | 0.0249 | 0.0249 | 0.0250 | 0.0251 | 0.0248 | 0.0249 | 0.0248 | 0.0248 | 0.0247 | 0.0247 |
| 300 | 0.0259 | 0.0254 | 0.0256 | 0.0251 | 0.0252 | 0.0251 | 0.0251 | 0.0251 | 0.0252 | 0.0250 | 0.0250 | 0.0249 | 0.0249 | 0.0248 | 0.0248 |
| 310 | 0.0261 | 0.0256 | 0.0257 | 0.0252 | 0.0253 | 0.0252 | 0.0252 | 0.0252 | 0.0253 | 0.0251 | 0.0251 | 0.0250 | 0.0250 | 0.0249 | 0.0250 |
| 320 | 0.0262 | 0.0257 | 0.0258 | 0.0253 | 0.0254 | 0.0253 | 0.0253 | 0.0253 | 0.0254 | 0.0252 | 0.0252 | 0.0251 | 0.0251 | 0.0250 | 0.0251 |
| 330 | 0.0263 | 0.0257 | 0.0259 | 0.0254 | 0.0255 | 0.0254 | 0.0254 | 0.0254 | 0.0255 | 0.0253 | 0.0253 | 0.0252 | 0.0252 | 0.0251 | 0.0251 |
| 340 | 0.0263 | 0.0258 | 0.0260 | 0.0255 | 0.0256 | 0.0254 | 0.0254 | 0.0255 | 0.0256 | 0.0253 | 0.0254 | 0.0253 | 0.0253 | 0.0252 | 0.0252 |
| 350 | 0.0264 | 0.0259 | 0.0260 | 0.0256 | 0.0257 | 0.0255 | 0.0255 | 0.0255 | 0.0257 | 0.0254 | 0.0255 | 0.0253 | 0.0253 | 0.0253 | 0.0253 |
| 360 | 0.0265 | 0.0260 | 0.0261 | 0.0256 | 0.0258 | 0.0256 | 0.0256 | 0.0256 | 0.0257 | 0.0255 | 0.0256 | 0.0254 | 0.0254 | 0.0253 | 0.0254 |
| 370 | 0.0266 | 0.0260 | 0.0262 | 0.0257 | 0.0258 | 0.0256 | 0.0256 | 0.0257 | 0.0258 | 0.0255 | 0.0256 | 0.0255 | 0.0255 | 0.0254 | 0.0254 |
| 380 | 0.0266 | 0.0261 | 0.0262 | 0.0257 | 0.0259 | 0.0257 | 0.0257 | 0.0257 | 0.0258 | 0.0256 | 0.0257 | 0.0255 | 0.0255 | 0.0255 | 0.0255 |
| 390 | 0.0267 | 0.0261 | 0.0263 | 0.0258 | 0.0259 | 0.0257 | 0.0257 | 0.0258 | 0.0259 | 0.0256 | 0.0257 | 0.0256 | 0.0256 | 0.0255 | 0.0255 |
| 400 | 0.0267 | 0.0262 | 0.0263 | 0.0258 | 0.0260 | 0.0258 | 0.0258 | 0.0258 | 0.0259 | 0.0257 | 0.0258 | 0.0256 | 0.0256 | 0.0255 | 0.0256 |
| 410 | 0.0267 | 0.0262 | 0.0263 | 0.0259 | 0.0260 | 0.0258 | 0.0258 | 0.0258 | 0.0260 | 0.0257 | 0.0258 | 0.0256 | 0.0256 | 0.0256 | 0.0256 |
| 420 | 0.0268 | 0.0262 | 0.0264 | 0.0259 | 0.0260 | 0.0258 | 0.0259 | 0.0259 | 0.0260 | 0.0257 | 0.0258 | 0.0257 | 0.0257 | 0.0256 | 0.0256 |
| 430 | 0.0268 | 0.0263 | 0.0264 | 0.0259 | 0.0261 | 0.0259 | 0.0259 | 0.0259 | 0.0260 | 0.0258 | 0.0258 | 0.0257 | 0.0257 | 0.0256 | 0.0257 |
| 440 | 0.0268 | 0.0263 | 0.0264 | 0.0259 | 0.0261 | 0.0259 | 0.0259 | 0.0259 | 0.0260 | 0.0258 | 0.0259 | 0.0257 | 0.0257 | 0.0257 | 0.0257 |
| 450 | 0.0268 | 0.0263 | 0.0264 | 0.0260 | 0.0261 | 0.0259 | 0.0259 | 0.0259 | 0.0261 | 0.0258 | 0.0259 | 0.0257 | 0.0257 | 0.0257 | 0.0257 |
| 460 | 0.0268 | 0.0263 | 0.0265 | 0.0260 | 0.0261 | 0.0259 | 0.0259 | 0.0260 | 0.0261 | 0.0258 | 0.0259 | 0.0257 | 0.0257 | 0.0257 | 0.0257 |
| 470 | 0.0269 | 0.0263 | 0.0265 | 0.0260 | 0.0261 | 0.0259 | 0.0259 | 0.0260 | 0.0261 | 0.0258 | 0.0259 | 0.0258 | 0.0258 | 0.0257 | 0.0257 |
| 480 | 0.0269 | 0.0263 | 0.0265 | 0.0260 | 0.0261 | 0.0259 | 0.0260 | 0.0260 | 0.0261 | 0.0258 | 0.0259 | 0.0258 | 0.0258 | 0.0257 | 0.0257 |
| 490 | 0.0269 | 0.0263 | 0.0265 | 0.0260 | 0.0261 | 0.0259 | 0.0260 | 0.0260 | 0.0261 | 0.0258 | 0.0259 | 0.0258 | 0.0258 | 0.0257 | 0.0257 |
| 500 | 0.0269 | 0.0263 | 0.0265 | 0.0260 | 0.0261 | 0.0259 | 0.0260 | 0.0260 | 0.0261 | 0.0258 | 0.0259 | 0.0258 | 0.0258 | 0.0257 | 0.0257 |
| 510 | 0.0269 | 0.0263 | 0.0265 | 0.0260 | 0.0261 | 0.0259 | 0.0260 | 0.0260 | 0.0261 | 0.0258 | 0.0259 | 0.0258 | 0.0258 | 0.0257 | 0.0257 |
| 520 | 0.0269 | 0.0263 | 0.0265 | 0.0260 | 0.0261 | 0.0259 | 0.0260 | 0.0260 | 0.0261 | 0.0258 | 0.0259 | 0.0258 | 0.0258 | 0.0257 | 0.0257 |
| 530 | 0.0269 | 0.0263 | 0.0265 | 0.0260 | 0.0261 | 0.0259 | 0.0259 | 0.0260 | 0.0261 | 0.0258 | 0.0259 | 0.0258 | 0.0258 | 0.0257 | 0.0257 |
| 540 | 0.0269 | 0.0263 | 0.0265 | 0.0260 | 0.0261 | 0.0259 | 0.0259 | 0.0260 | 0.0261 | 0.0258 | 0.0259 | 0.0258 | 0.0258 | 0.0257 | 0.0257 |
| 550 | 0.0268 | 0.0263 | 0.0265 | 0.0260 | 0.0261 | 0.0259 | 0.0259 | 0.0259 | 0.0261 | 0.0258 | 0.0259 | 0.0257 | 0.0257 | 0.0257 | 0.0257 |
| 560 | 0.0268 | 0.0263 | 0.0264 | 0.0260 | 0.0261 | 0.0259 | 0.0259 | 0.0259 | 0.0261 | 0.0258 | 0.0259 | 0.0257 | 0.0257 | 0.0257 | 0.0257 |
| 570 | 0.0268 | 0.0263 | 0.0264 | 0.0259 | 0.0261 | 0.0259 | 0.0259 | 0.0259 | 0.0260 | 0.0258 | 0.0259 | 0.0257 | 0.0257 | 0.0257 | 0.0257 |
| 580 | 0.0268 | 0.0263 | 0.0264 | 0.0259 | 0.0261 | 0.0259 | 0.0259 | 0.0259 | 0.0260 | 0.0258 | 0.0259 | 0.0257 | 0.0257 | 0.0256 | 0.0257 |
| 590 | 0.0268 | 0.0263 | 0.0264 | 0.0259 | 0.0260 | 0.0259 | 0.0259 | 0.0259 | 0.0260 | 0.0258 | 0.0258 | 0.0257 | 0.0257 | 0.0256 | 0.0256 |
| 600 | 0.0268 | 0.0262 | 0.0264 | 0.0259 | 0.0260 | 0.0258 | 0.0259 | 0.0259 | 0.0260 | 0.0257 | 0.0258 | 0.0257 | 0.0257 | 0.0256 | 0.0256 |
| 610 | 0.0267 | 0.0262 | 0.0264 | 0.0259 | 0.0260 | 0.0258 | 0.0258 | 0.0259 | 0.0260 | 0.0257 | 0.0258 | 0.0256 | 0.0256 | 0.0256 | 0.0256 |
| 620 | 0.0267 | 0.0262 | 0.0263 | 0.0259 | 0.0260 | 0.0258 | 0.0258 | 0.0258 | 0.0259 | 0.0257 | 0.0258 | 0.0256 | 0.0256 | 0.0256 | 0.0256 |
| 630 | 0.0267 | 0.0262 | 0.0263 | 0.0258 | 0.0260 | 0.0258 | 0.0258 | 0.0258 | 0.0259 | 0.0257 | 0.0258 | 0.0256 | 0.0256 | 0.0255 | 0.0256 |
| 640 | 0.0267 | 0.0262 | 0.0263 | 0.0258 | 0.0259 | 0.0258 | 0.0258 | 0.0258 | 0.0259 | 0.0256 | 0.0257 | 0.0256 | 0.0256 | 0.0255 | 0.0255 |
| 650 | 0.0266 | 0.0261 | 0.0263 | 0.0258 | 0.0259 | 0.0257 | 0.0257 | 0.0258 | 0.0259 | 0.0256 | 0.0257 | 0.0256 | 0.0256 | 0.0255 | 0.0255 |
| 660 | 0.0266 | 0.0261 | 0.0262 | 0.0258 | 0.0259 | 0.0257 | 0.0257 | 0.0257 | 0.0258 | 0.0256 | 0.0257 | 0.0255 | 0.0255 | 0.0255 | 0.0255 |
| 670 | 0.0266 | 0.0261 | 0.0262 | 0.0257 | 0.0259 | 0.0257 | 0.0257 | 0.0257 | 0.0258 | 0.0256 | 0.0257 | 0.0255 | 0.0255 | 0.0254 | 0.0255 |

TABLE 3. Compton component of the mass-energy absorption coefficient (cm/g) in the energy region 1 keV–1 MeV—Continued

| <i>E</i> (keV) | Pm | Sm | Eu | Gd | Tb | Dy | Ho | Er | Tm | Yb | Lu | Hf | Ta | W | Re |
|----------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 680 | 0.0266 | 0.0260 | 0.0262 | 0.0257 | 0.0258 | 0.0256 | 0.0257 | 0.0257 | 0.0258 | 0.0255 | 0.0256 | 0.0255 | 0.0255 | 0.0254 | 0.0254 |
| 690 | 0.0265 | 0.0260 | 0.0261 | 0.0257 | 0.0258 | 0.0256 | 0.0256 | 0.0256 | 0.0258 | 0.0255 | 0.0256 | 0.0254 | 0.0254 | 0.0254 | 0.0254 |
| 700 | 0.0265 | 0.0260 | 0.0261 | 0.0256 | 0.0258 | 0.0256 | 0.0256 | 0.0256 | 0.0257 | 0.0255 | 0.0256 | 0.0254 | 0.0254 | 0.0254 | 0.0254 |
| 710 | 0.0265 | 0.0259 | 0.0261 | 0.0256 | 0.0257 | 0.0256 | 0.0256 | 0.0256 | 0.0257 | 0.0254 | 0.0255 | 0.0254 | 0.0254 | 0.0253 | 0.0253 |
| 720 | 0.0264 | 0.0259 | 0.0260 | 0.0256 | 0.0257 | 0.0255 | 0.0255 | 0.0255 | 0.0257 | 0.0254 | 0.0255 | 0.0253 | 0.0253 | 0.0253 | 0.0253 |
| 730 | 0.0264 | 0.0259 | 0.0260 | 0.0255 | 0.0257 | 0.0255 | 0.0255 | 0.0255 | 0.0256 | 0.0254 | 0.0255 | 0.0253 | 0.0253 | 0.0253 | 0.0253 |
| 740 | 0.0264 | 0.0258 | 0.0260 | 0.0255 | 0.0256 | 0.0255 | 0.0255 | 0.0255 | 0.0256 | 0.0254 | 0.0254 | 0.0253 | 0.0253 | 0.0252 | 0.0252 |
| 750 | 0.0263 | 0.0258 | 0.0259 | 0.0255 | 0.0256 | 0.0254 | 0.0254 | 0.0254 | 0.0256 | 0.0253 | 0.0254 | 0.0252 | 0.0252 | 0.0252 | 0.0252 |
| 760 | 0.0263 | 0.0258 | 0.0259 | 0.0254 | 0.0256 | 0.0254 | 0.0254 | 0.0254 | 0.0255 | 0.0253 | 0.0254 | 0.0252 | 0.0252 | 0.0252 | 0.0252 |
| 770 | 0.0263 | 0.0257 | 0.0259 | 0.0254 | 0.0255 | 0.0253 | 0.0254 | 0.0254 | 0.0255 | 0.0252 | 0.0253 | 0.0252 | 0.0252 | 0.0251 | 0.0251 |
| 780 | 0.0262 | 0.0257 | 0.0258 | 0.0254 | 0.0255 | 0.0253 | 0.0253 | 0.0253 | 0.0255 | 0.0252 | 0.0253 | 0.0251 | 0.0251 | 0.0251 | 0.0251 |
| 790 | 0.0262 | 0.0257 | 0.0258 | 0.0253 | 0.0255 | 0.0253 | 0.0253 | 0.0253 | 0.0254 | 0.0252 | 0.0253 | 0.0251 | 0.0251 | 0.0251 | 0.0251 |
| 800 | 0.0261 | 0.0256 | 0.0258 | 0.0253 | 0.0254 | 0.0252 | 0.0252 | 0.0253 | 0.0254 | 0.0251 | 0.0252 | 0.0251 | 0.0251 | 0.0250 | 0.0250 |
| 810 | 0.0261 | 0.0256 | 0.0257 | 0.0253 | 0.0254 | 0.0252 | 0.0252 | 0.0252 | 0.0253 | 0.0251 | 0.0252 | 0.0250 | 0.0250 | 0.0250 | 0.0250 |
| 820 | 0.0261 | 0.0256 | 0.0257 | 0.0252 | 0.0253 | 0.0252 | 0.0252 | 0.0252 | 0.0253 | 0.0251 | 0.0251 | 0.0250 | 0.0250 | 0.0249 | 0.0250 |
| 830 | 0.0260 | 0.0255 | 0.0256 | 0.0252 | 0.0253 | 0.0251 | 0.0251 | 0.0252 | 0.0253 | 0.0250 | 0.0251 | 0.0250 | 0.0250 | 0.0249 | 0.0249 |
| 840 | 0.0260 | 0.0255 | 0.0256 | 0.0251 | 0.0253 | 0.0251 | 0.0251 | 0.0251 | 0.0252 | 0.0250 | 0.0251 | 0.0249 | 0.0249 | 0.0249 | 0.0249 |
| 850 | 0.0259 | 0.0254 | 0.0256 | 0.0251 | 0.0252 | 0.0250 | 0.0251 | 0.0251 | 0.0252 | 0.0249 | 0.0250 | 0.0249 | 0.0249 | 0.0248 | 0.0248 |
| 860 | 0.0259 | 0.0254 | 0.0255 | 0.0251 | 0.0252 | 0.0250 | 0.0250 | 0.0250 | 0.0252 | 0.0249 | 0.0250 | 0.0248 | 0.0248 | 0.0248 | 0.0248 |
| 870 | 0.0259 | 0.0254 | 0.0255 | 0.0250 | 0.0251 | 0.0250 | 0.0250 | 0.0250 | 0.0251 | 0.0249 | 0.0249 | 0.0248 | 0.0248 | 0.0247 | 0.0248 |
| 880 | 0.0258 | 0.0253 | 0.0254 | 0.0250 | 0.0251 | 0.0249 | 0.0249 | 0.0250 | 0.0251 | 0.0248 | 0.0249 | 0.0248 | 0.0248 | 0.0247 | 0.0247 |
| 890 | 0.0258 | 0.0253 | 0.0254 | 0.0249 | 0.0251 | 0.0249 | 0.0249 | 0.0249 | 0.0250 | 0.0248 | 0.0249 | 0.0247 | 0.0247 | 0.0247 | 0.0247 |
| 900 | 0.0257 | 0.0252 | 0.0254 | 0.0249 | 0.0250 | 0.0248 | 0.0249 | 0.0249 | 0.0250 | 0.0247 | 0.0248 | 0.0247 | 0.0247 | 0.0246 | 0.0246 |
| 910 | 0.0257 | 0.0252 | 0.0253 | 0.0249 | 0.0250 | 0.0248 | 0.0248 | 0.0248 | 0.0249 | 0.0247 | 0.0248 | 0.0246 | 0.0246 | 0.0246 | 0.0246 |
| 920 | 0.0257 | 0.0251 | 0.0253 | 0.0248 | 0.0249 | 0.0248 | 0.0248 | 0.0248 | 0.0249 | 0.0247 | 0.0247 | 0.0246 | 0.0246 | 0.0245 | 0.0246 |
| 930 | 0.0256 | 0.0251 | 0.0252 | 0.0248 | 0.0249 | 0.0247 | 0.0247 | 0.0248 | 0.0249 | 0.0246 | 0.0247 | 0.0246 | 0.0246 | 0.0245 | 0.0245 |
| 940 | 0.0256 | 0.0251 | 0.0252 | 0.0247 | 0.0249 | 0.0247 | 0.0247 | 0.0247 | 0.0248 | 0.0246 | 0.0247 | 0.0245 | 0.0245 | 0.0245 | 0.0245 |
| 950 | 0.0255 | 0.0250 | 0.0252 | 0.0247 | 0.0248 | 0.0246 | 0.0247 | 0.0247 | 0.0248 | 0.0245 | 0.0246 | 0.0245 | 0.0245 | 0.0244 | 0.0244 |
| 960 | 0.0255 | 0.0250 | 0.0251 | 0.0247 | 0.0248 | 0.0246 | 0.0246 | 0.0246 | 0.0247 | 0.0245 | 0.0246 | 0.0244 | 0.0244 | 0.0244 | 0.0244 |
| 970 | 0.0254 | 0.0249 | 0.0251 | 0.0246 | 0.0247 | 0.0246 | 0.0246 | 0.0246 | 0.0247 | 0.0245 | 0.0245 | 0.0244 | 0.0244 | 0.0243 | 0.0244 |
| 980 | 0.0254 | 0.0249 | 0.0250 | 0.0246 | 0.0247 | 0.0245 | 0.0245 | 0.0245 | 0.0247 | 0.0244 | 0.0245 | 0.0243 | 0.0244 | 0.0243 | 0.0243 |
| 990 | 0.0253 | 0.0249 | 0.0250 | 0.0245 | 0.0246 | 0.0245 | 0.0245 | 0.0245 | 0.0246 | 0.0244 | 0.0245 | 0.0243 | 0.0243 | 0.0243 | 0.0243 |
| 1000 | 0.0253 | 0.0248 | 0.0249 | 0.0245 | 0.0246 | 0.0244 | 0.0244 | 0.0245 | 0.0246 | 0.0243 | 0.0244 | 0.0243 | 0.0243 | 0.0242 | 0.0242 |
| <i>E</i> (keV) | Os | Ir | Pt | Au | Hg | Tl | Pb | Bi | Po | At | Rn | Fr | Ra | Ac | Th |
| 1 | 0.0003 | 0.0003 | 0.0003 | 0.0003 | 0.0003 | 0.0003 | 0.0003 | 0.0003 | 0.0003 | 0.0003 | 0.0003 | 0.0003 | 0.0003 | 0.0003 | 0.0003 |
| 2 | 0.0007 | 0.0007 | 0.0007 | 0.0007 | 0.0007 | 0.0007 | 0.0007 | 0.0007 | 0.0007 | 0.0007 | 0.0006 | 0.0006 | 0.0006 | 0.0006 | 0.0006 |
| 3 | 0.0010 | 0.0010 | 0.0010 | 0.0010 | 0.0010 | 0.0010 | 0.0010 | 0.0010 | 0.0010 | 0.0010 | 0.0010 | 0.0010 | 0.0010 | 0.0010 | 0.0010 |
| 4 | 0.0013 | 0.0013 | 0.0013 | 0.0013 | 0.0013 | 0.0013 | 0.0013 | 0.0013 | 0.0013 | 0.0013 | 0.0013 | 0.0013 | 0.0013 | 0.0013 | 0.0013 |
| 5 | 0.0016 | 0.0016 | 0.0016 | 0.0016 | 0.0016 | 0.0016 | 0.0016 | 0.0016 | 0.0016 | 0.0016 | 0.0016 | 0.0016 | 0.0016 | 0.0016 | 0.0016 |
| 6 | 0.0019 | 0.0019 | 0.0019 | 0.0019 | 0.0019 | 0.0019 | 0.0019 | 0.0019 | 0.0019 | 0.0019 | 0.0019 | 0.0019 | 0.0019 | 0.0019 | 0.0019 |
| 7 | 0.0022 | 0.0022 | 0.0022 | 0.0022 | 0.0022 | 0.0022 | 0.0022 | 0.0022 | 0.0022 | 0.0023 | 0.0022 | 0.0022 | 0.0022 | 0.0022 | 0.0022 |
| 8 | 0.0025 | 0.0025 | 0.0025 | 0.0025 | 0.0025 | 0.0025 | 0.0025 | 0.0025 | 0.0025 | 0.0026 | 0.0024 | 0.0025 | 0.0025 | 0.0025 | 0.0025 |
| 9 | 0.0028 | 0.0028 | 0.0028 | 0.0028 | 0.0028 | 0.0028 | 0.0028 | 0.0028 | 0.0028 | 0.0029 | 0.0027 | 0.0028 | 0.0027 | 0.0028 | 0.0027 |
| 10 | 0.0031 | 0.0031 | 0.0031 | 0.0031 | 0.0031 | 0.0031 | 0.0031 | 0.0031 | 0.0031 | 0.0031 | 0.0030 | 0.0030 | 0.0030 | 0.0030 | 0.0030 |
| 20 | 0.0058 | 0.0058 | 0.0058 | 0.0058 | 0.0058 | 0.0057 | 0.0057 | 0.0057 | 0.0058 | 0.0058 | 0.0056 | 0.0056 | 0.0056 | 0.0057 | 0.0056 |
| 30 | 0.0080 | 0.0081 | 0.0080 | 0.0081 | 0.0080 | 0.0080 | 0.0080 | 0.0080 | 0.0081 | 0.0081 | 0.0078 | 0.0079 | 0.0078 | 0.0079 | 0.0078 |
| 40 | 0.0100 | 0.0100 | 0.0100 | 0.0100 | 0.0100 | 0.0099 | 0.0099 | 0.0100 | 0.0100 | 0.0101 | 0.0097 | 0.0098 | 0.0098 | 0.0098 | 0.0097 |
| 50 | 0.0117 | 0.0117 | 0.0117 | 0.0118 | 0.0117 | 0.0116 | 0.0116 | 0.0117 | 0.0117 | 0.0119 | 0.0114 | 0.0114 | 0.0114 | 0.0115 | 0.0114 |
| 60 | 0.0132 | 0.0132 | 0.0132 | 0.0133 | 0.0132 | 0.0131 | 0.0131 | 0.0131 | 0.0132 | 0.0134 | 0.0128 | 0.0129 | 0.0129 | 0.0130 | 0.0128 |
| 70 | 0.0145 | 0.0146 | 0.0145 | 0.0146 | 0.0145 | 0.0144 | 0.0144 | 0.0144 | 0.0145 | 0.0147 | 0.0141 | 0.0142 | 0.0141 | 0.0142 | 0.0141 |
| 80 | 0.0157 | 0.0157 | 0.0157 | 0.0157 | 0.0156 | 0.0155 | 0.0155 | 0.0156 | 0.0157 | 0.0159 | 0.0152 | 0.0153 | 0.0153 | 0.0154 | 0.0152 |
| 90 | 0.0167 | 0.0167 | 0.0167 | 0.0168 | 0.0167 | 0.0166 | 0.0165 | 0.0166 | 0.0167 | 0.0169 | 0.0162 | 0.0163 | 0.0163 | 0.0164 | 0.0162 |
| 100 | 0.0176 | 0.0176 | 0.0176 | 0.0177 | 0.0176 | 0.0174 | 0.0174 | 0.0175 | 0.0176 | 0.0178 | 0.0171 | 0.0172 | 0.0171 | 0.0173 | 0.0171 |
| 110 | 0.0184 | 0.0184 | 0.0184 | 0.0185 | 0.0184 | 0.0182 | 0.0182 | 0.0183 | 0.0184 | 0.0186 | 0.0178 | 0.0180 | 0.0179 | 0.0180 | 0.0178 |
| 120 | 0.0191 | 0.0191 | 0.0191 | 0.0192 | 0.0191 | 0.0189 | 0.0189 | 0.0190 | 0.0191 | 0.0194 | 0.0185 | 0.0187 | 0.0186 | 0.0187 | 0.0185 |
| 130 | 0.0197 | 0.0198 | 0.0198 | 0.0198 | 0.0197 | 0.0196 | 0.0196 | 0.0196 | 0.0198 | 0.0200 | 0.0191 | 0.0193 | 0.0192 | 0.0194 | 0.0192 |
| 140 | 0.0203 | 0.0204 | 0.0203 | 0.0204 | 0.0203 | 0.0202 | 0.0201 | 0.0202 | 0.0203 | 0.0206 | 0.0197 | 0.0198 | 0.0198 | 0.0199 | 0.0197 |
| 150 | 0.0208 | 0.0209 | 0.0208 | 0.0209 | 0.0208 | 0.0207 | 0.0206 | 0.0207 | 0.0209 | 0.0211 | 0.0202 | 0.0203 | 0.0203 | 0.0204 | 0.0202 |
| 160 | 0.0213 | 0.0213 | 0.0213 | 0.0214 | 0.0213 | 0.0211 | 0.0211 | 0.0212 | 0.0213 | 0.0216 | 0.0206 | 0.0208 | 0.0208 | 0.0209 | 0.0207 |
| 170 | 0.0217 | 0.0218 | 0.0217 | 0.0218 | 0.0217 | 0.0215 | 0.0215 | 0.0216 | 0.0217 | 0.0220 | 0.0211 | 0.0212 | 0.0212 | 0.0213 | 0.0211 |
| 180 | 0.0221 | 0.0221 | 0.0221 | 0.0222 | 0.0220 | 0.0219 | 0.0219 | 0.0220 | 0.0221 | 0.0224 | 0.0214 | 0.0216 | 0.0215 | 0.0217 | 0.0214 |
| 190 | 0.0224 | 0.0225 | 0.0224 | 0.0225 | 0.0224 | 0.0223 | 0.0222 | 0.0223 | 0.0225 | 0.0227 | 0.0218 | 0.0219 | 0.0219 | 0.0220 | 0.0218 |
| 200 | 0.0227 | 0.0228 | 0.0228 | 0.0228 | 0.0227 | 0.0226 | 0.0225 | 0.0226 | 0.0228 | 0.0230 | 0.0221 | 0.0222 | 0.0222 | 0.0223 | 0.0221 |
| 210 | 0.0230 | 0.0231 | 0.0230 | 0.0231 | 0.0230 | 0.0228 | 0.0228 | 0.0229 | 0.0231 | 0.0233 | 0.0223 | 0.0225 | 0.0224 | 0.0226 | 0.0223 |

TABLE 3. Compton component of the mass-energy absorption coefficient (cm/g) in the energy region 1 keV–1 MeV—Continued

| <i>E</i> (keV) | Os | Ir | Pt | Au | Hg | Tl | Pb | Bi | Po | At | Rn | Fr | Ra | Ac | Th |
|----------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 220 | 0.0233 | 0.0233 | 0.0233 | 0.0234 | 0.0232 | 0.0231 | 0.0231 | 0.0231 | 0.0233 | 0.0236 | 0.0226 | 0.0227 | 0.0227 | 0.0228 | 0.0226 |
| 230 | 0.0235 | 0.0236 | 0.0235 | 0.0236 | 0.0235 | 0.0233 | 0.0233 | 0.0234 | 0.0235 | 0.0238 | 0.0228 | 0.0230 | 0.0229 | 0.0231 | 0.0228 |
| 240 | 0.0237 | 0.0238 | 0.0237 | 0.0238 | 0.0237 | 0.0235 | 0.0235 | 0.0236 | 0.0238 | 0.0240 | 0.0230 | 0.0232 | 0.0231 | 0.0233 | 0.0230 |
| 250 | 0.0239 | 0.0240 | 0.0239 | 0.0240 | 0.0239 | 0.0237 | 0.0237 | 0.0238 | 0.0239 | 0.0242 | 0.0232 | 0.0234 | 0.0233 | 0.0235 | 0.0232 |
| 260 | 0.0241 | 0.0242 | 0.0241 | 0.0242 | 0.0240 | 0.0239 | 0.0239 | 0.0239 | 0.0241 | 0.0244 | 0.0234 | 0.0235 | 0.0235 | 0.0236 | 0.0234 |
| 270 | 0.0242 | 0.0243 | 0.0243 | 0.0243 | 0.0242 | 0.0241 | 0.0240 | 0.0241 | 0.0243 | 0.0246 | 0.0235 | 0.0237 | 0.0236 | 0.0238 | 0.0235 |
| 280 | 0.0244 | 0.0245 | 0.0244 | 0.0245 | 0.0243 | 0.0242 | 0.0242 | 0.0243 | 0.0244 | 0.0247 | 0.0237 | 0.0238 | 0.0238 | 0.0239 | 0.0237 |
| 290 | 0.0245 | 0.0246 | 0.0245 | 0.0246 | 0.0245 | 0.0243 | 0.0243 | 0.0244 | 0.0246 | 0.0248 | 0.0238 | 0.0240 | 0.0239 | 0.0241 | 0.0238 |
| 300 | 0.0246 | 0.0247 | 0.0247 | 0.0247 | 0.0246 | 0.0245 | 0.0244 | 0.0245 | 0.0247 | 0.0250 | 0.0239 | 0.0241 | 0.0240 | 0.0242 | 0.0239 |
| 310 | 0.0248 | 0.0248 | 0.0248 | 0.0249 | 0.0247 | 0.0246 | 0.0245 | 0.0246 | 0.0248 | 0.0251 | 0.0240 | 0.0242 | 0.0241 | 0.0243 | 0.0240 |
| 320 | 0.0249 | 0.0249 | 0.0249 | 0.0250 | 0.0248 | 0.0247 | 0.0246 | 0.0247 | 0.0249 | 0.0252 | 0.0241 | 0.0243 | 0.0242 | 0.0244 | 0.0241 |
| 330 | 0.0249 | 0.0250 | 0.0250 | 0.0250 | 0.0249 | 0.0247 | 0.0247 | 0.0248 | 0.0250 | 0.0253 | 0.0242 | 0.0244 | 0.0243 | 0.0245 | 0.0242 |
| 340 | 0.0250 | 0.0251 | 0.0250 | 0.0251 | 0.0250 | 0.0248 | 0.0248 | 0.0249 | 0.0251 | 0.0254 | 0.0243 | 0.0244 | 0.0244 | 0.0246 | 0.0243 |
| 350 | 0.0251 | 0.0252 | 0.0251 | 0.0252 | 0.0250 | 0.0249 | 0.0249 | 0.0249 | 0.0251 | 0.0254 | 0.0243 | 0.0245 | 0.0245 | 0.0246 | 0.0244 |
| 360 | 0.0252 | 0.0252 | 0.0252 | 0.0253 | 0.0251 | 0.0250 | 0.0249 | 0.0250 | 0.0252 | 0.0255 | 0.0244 | 0.0246 | 0.0245 | 0.0247 | 0.0244 |
| 370 | 0.0252 | 0.0253 | 0.0252 | 0.0253 | 0.0252 | 0.0250 | 0.0250 | 0.0251 | 0.0252 | 0.0255 | 0.0245 | 0.0246 | 0.0246 | 0.0247 | 0.0245 |
| 380 | 0.0253 | 0.0253 | 0.0253 | 0.0254 | 0.0252 | 0.0251 | 0.0250 | 0.0251 | 0.0253 | 0.0256 | 0.0245 | 0.0247 | 0.0246 | 0.0248 | 0.0245 |
| 390 | 0.0253 | 0.0254 | 0.0253 | 0.0254 | 0.0253 | 0.0251 | 0.0251 | 0.0252 | 0.0253 | 0.0256 | 0.0245 | 0.0247 | 0.0247 | 0.0248 | 0.0246 |
| 400 | 0.0254 | 0.0254 | 0.0254 | 0.0255 | 0.0253 | 0.0252 | 0.0251 | 0.0252 | 0.0254 | 0.0257 | 0.0246 | 0.0248 | 0.0247 | 0.0249 | 0.0246 |
| 410 | 0.0254 | 0.0255 | 0.0254 | 0.0255 | 0.0253 | 0.0252 | 0.0252 | 0.0252 | 0.0254 | 0.0257 | 0.0246 | 0.0248 | 0.0247 | 0.0249 | 0.0246 |
| 420 | 0.0254 | 0.0255 | 0.0254 | 0.0255 | 0.0254 | 0.0252 | 0.0252 | 0.0253 | 0.0255 | 0.0258 | 0.0246 | 0.0248 | 0.0248 | 0.0249 | 0.0247 |
| 430 | 0.0254 | 0.0255 | 0.0255 | 0.0255 | 0.0254 | 0.0252 | 0.0252 | 0.0253 | 0.0255 | 0.0258 | 0.0247 | 0.0249 | 0.0248 | 0.0250 | 0.0247 |
| 440 | 0.0255 | 0.0255 | 0.0255 | 0.0256 | 0.0254 | 0.0253 | 0.0252 | 0.0253 | 0.0255 | 0.0258 | 0.0247 | 0.0249 | 0.0248 | 0.0250 | 0.0247 |
| 450 | 0.0255 | 0.0256 | 0.0255 | 0.0256 | 0.0254 | 0.0253 | 0.0252 | 0.0253 | 0.0255 | 0.0258 | 0.0247 | 0.0249 | 0.0248 | 0.0250 | 0.0247 |
| 460 | 0.0255 | 0.0256 | 0.0255 | 0.0256 | 0.0255 | 0.0253 | 0.0253 | 0.0254 | 0.0255 | 0.0258 | 0.0247 | 0.0249 | 0.0249 | 0.0250 | 0.0248 |
| 470 | 0.0255 | 0.0256 | 0.0255 | 0.0256 | 0.0255 | 0.0253 | 0.0253 | 0.0254 | 0.0255 | 0.0258 | 0.0247 | 0.0249 | 0.0249 | 0.0250 | 0.0248 |
| 480 | 0.0255 | 0.0256 | 0.0255 | 0.0256 | 0.0255 | 0.0253 | 0.0253 | 0.0254 | 0.0256 | 0.0259 | 0.0247 | 0.0249 | 0.0249 | 0.0250 | 0.0248 |
| 490 | 0.0255 | 0.0256 | 0.0255 | 0.0256 | 0.0255 | 0.0253 | 0.0253 | 0.0254 | 0.0256 | 0.0259 | 0.0247 | 0.0249 | 0.0249 | 0.0250 | 0.0248 |
| 500 | 0.0255 | 0.0256 | 0.0255 | 0.0256 | 0.0255 | 0.0253 | 0.0253 | 0.0254 | 0.0256 | 0.0259 | 0.0248 | 0.0249 | 0.0249 | 0.0250 | 0.0248 |
| 510 | 0.0255 | 0.0256 | 0.0255 | 0.0256 | 0.0255 | 0.0253 | 0.0253 | 0.0254 | 0.0256 | 0.0259 | 0.0248 | 0.0249 | 0.0249 | 0.0250 | 0.0248 |
| 520 | 0.0255 | 0.0256 | 0.0255 | 0.0256 | 0.0255 | 0.0253 | 0.0253 | 0.0254 | 0.0256 | 0.0259 | 0.0247 | 0.0249 | 0.0249 | 0.0250 | 0.0248 |
| 530 | 0.0255 | 0.0256 | 0.0255 | 0.0256 | 0.0255 | 0.0253 | 0.0253 | 0.0254 | 0.0255 | 0.0259 | 0.0247 | 0.0249 | 0.0249 | 0.0250 | 0.0248 |
| 540 | 0.0255 | 0.0256 | 0.0255 | 0.0256 | 0.0255 | 0.0253 | 0.0253 | 0.0254 | 0.0255 | 0.0258 | 0.0247 | 0.0249 | 0.0249 | 0.0250 | 0.0248 |
| 550 | 0.0255 | 0.0256 | 0.0255 | 0.0256 | 0.0255 | 0.0253 | 0.0253 | 0.0253 | 0.0255 | 0.0258 | 0.0247 | 0.0249 | 0.0249 | 0.0250 | 0.0247 |
| 560 | 0.0255 | 0.0256 | 0.0255 | 0.0256 | 0.0254 | 0.0253 | 0.0252 | 0.0253 | 0.0255 | 0.0258 | 0.0247 | 0.0249 | 0.0248 | 0.0250 | 0.0247 |
| 570 | 0.0255 | 0.0255 | 0.0255 | 0.0256 | 0.0254 | 0.0253 | 0.0252 | 0.0253 | 0.0255 | 0.0258 | 0.0247 | 0.0249 | 0.0248 | 0.0250 | 0.0247 |
| 580 | 0.0255 | 0.0255 | 0.0255 | 0.0256 | 0.0254 | 0.0253 | 0.0252 | 0.0253 | 0.0255 | 0.0258 | 0.0247 | 0.0249 | 0.0248 | 0.0250 | 0.0247 |
| 590 | 0.0254 | 0.0255 | 0.0255 | 0.0255 | 0.0254 | 0.0252 | 0.0252 | 0.0253 | 0.0255 | 0.0258 | 0.0247 | 0.0248 | 0.0248 | 0.0250 | 0.0247 |
| 600 | 0.0254 | 0.0255 | 0.0254 | 0.0255 | 0.0254 | 0.0252 | 0.0252 | 0.0253 | 0.0255 | 0.0258 | 0.0247 | 0.0248 | 0.0248 | 0.0249 | 0.0247 |
| 610 | 0.0254 | 0.0255 | 0.0254 | 0.0255 | 0.0254 | 0.0252 | 0.0252 | 0.0253 | 0.0254 | 0.0257 | 0.0246 | 0.0248 | 0.0248 | 0.0249 | 0.0247 |
| 620 | 0.0254 | 0.0254 | 0.0254 | 0.0255 | 0.0253 | 0.0252 | 0.0251 | 0.0252 | 0.0254 | 0.0257 | 0.0246 | 0.0248 | 0.0247 | 0.0249 | 0.0246 |
| 630 | 0.0254 | 0.0254 | 0.0254 | 0.0255 | 0.0253 | 0.0252 | 0.0251 | 0.0252 | 0.0254 | 0.0257 | 0.0246 | 0.0248 | 0.0247 | 0.0249 | 0.0246 |
| 640 | 0.0253 | 0.0254 | 0.0254 | 0.0254 | 0.0253 | 0.0251 | 0.0251 | 0.0252 | 0.0254 | 0.0257 | 0.0246 | 0.0247 | 0.0247 | 0.0249 | 0.0246 |
| 650 | 0.0253 | 0.0254 | 0.0253 | 0.0254 | 0.0253 | 0.0251 | 0.0251 | 0.0252 | 0.0253 | 0.0256 | 0.0245 | 0.0247 | 0.0247 | 0.0248 | 0.0246 |
| 660 | 0.0253 | 0.0253 | 0.0253 | 0.0254 | 0.0252 | 0.0251 | 0.0250 | 0.0251 | 0.0253 | 0.0256 | 0.0245 | 0.0247 | 0.0246 | 0.0248 | 0.0245 |
| 670 | 0.0253 | 0.0253 | 0.0253 | 0.0254 | 0.0252 | 0.0251 | 0.0250 | 0.0251 | 0.0253 | 0.0256 | 0.0245 | 0.0247 | 0.0246 | 0.0248 | 0.0245 |
| 680 | 0.0252 | 0.0253 | 0.0252 | 0.0253 | 0.0252 | 0.0250 | 0.0250 | 0.0251 | 0.0253 | 0.0256 | 0.0245 | 0.0246 | 0.0246 | 0.0248 | 0.0245 |
| 690 | 0.0252 | 0.0253 | 0.0252 | 0.0253 | 0.0252 | 0.0250 | 0.0250 | 0.0251 | 0.0252 | 0.0255 | 0.0244 | 0.0246 | 0.0246 | 0.0247 | 0.0245 |
| 700 | 0.0252 | 0.0252 | 0.0252 | 0.0253 | 0.0251 | 0.0250 | 0.0249 | 0.0250 | 0.0252 | 0.0255 | 0.0244 | 0.0246 | 0.0245 | 0.0247 | 0.0244 |
| 710 | 0.0251 | 0.0252 | 0.0252 | 0.0252 | 0.0251 | 0.0249 | 0.0249 | 0.0250 | 0.0252 | 0.0255 | 0.0244 | 0.0245 | 0.0245 | 0.0247 | 0.0244 |
| 720 | 0.0251 | 0.0252 | 0.0251 | 0.0252 | 0.0251 | 0.0249 | 0.0249 | 0.0250 | 0.0251 | 0.0254 | 0.0243 | 0.0245 | 0.0245 | 0.0246 | 0.0244 |
| 730 | 0.0251 | 0.0251 | 0.0251 | 0.0252 | 0.0250 | 0.0249 | 0.0248 | 0.0249 | 0.0251 | 0.0254 | 0.0243 | 0.0245 | 0.0244 | 0.0246 | 0.0243 |
| 740 | 0.0250 | 0.0251 | 0.0251 | 0.0251 | 0.0250 | 0.0248 | 0.0248 | 0.0249 | 0.0251 | 0.0254 | 0.0243 | 0.0245 | 0.0244 | 0.0246 | 0.0243 |
| 750 | 0.0250 | 0.0251 | 0.0250 | 0.0251 | 0.0250 | 0.0248 | 0.0248 | 0.0249 | 0.0250 | 0.0253 | 0.0242 | 0.0244 | 0.0244 | 0.0245 | 0.0243 |
| 760 | 0.0250 | 0.0250 | 0.0250 | 0.0251 | 0.0249 | 0.0248 | 0.0247 | 0.0248 | 0.0250 | 0.0253 | 0.0242 | 0.0244 | 0.0243 | 0.0245 | 0.0242 |
| 770 | 0.0249 | 0.0250 | 0.0250 | 0.0250 | 0.0249 | 0.0247 | 0.0247 | 0.0248 | 0.0250 | 0.0253 | 0.0242 | 0.0244 | 0.0243 | 0.0245 | 0.0242 |
| 780 | 0.0249 | 0.0250 | 0.0249 | 0.0250 | 0.0249 | 0.0247 | 0.0247 | 0.0248 | 0.0249 | 0.0252 | 0.0241 | 0.0243 | 0.0243 | 0.0244 | 0.0242 |
| 790 | 0.0249 | 0.0249 | 0.0249 | 0.0250 | 0.0248 | 0.0247 | 0.0246 | 0.0247 | 0.0249 | 0.0252 | 0.0241 | 0.0243 | 0.0242 | 0.0244 | 0.0241 |
| 800 | 0.0248 | 0.0249 | 0.0248 | 0.0249 | 0.0248 | 0.0246 | 0.0246 | 0.0247 | 0.0249 | 0.0252 | 0.0241 | 0.0242 | 0.0242 | 0.0244 | 0.0241 |
| 810 | 0.0248 | 0.0249 | 0.0248 | 0.0249 | 0.0247 | 0.0246 | 0.0246 | 0.0246 | 0.0248 | 0.0251 | 0.0240 | 0.0242 | 0.0242 | 0.0243 | 0.0241 |
| 820 | 0.0248 | 0.0248 | 0.0248 | 0.0249 | 0.0247 | 0.0246 | 0.0245 | 0.0246 | 0.0248 | 0.0251 | 0.0240 | 0.0242 | 0.0241 | 0.0243 | 0.0240 |
| 830 | 0.0247 | 0.0248 | 0.0247 | 0.0248 | 0.0247 | 0.0245 | 0.0245 | 0.0246 | 0.0247 | 0.0250 | 0.0240 | 0.0241 | 0.0241 | 0.0243 | 0.0240 |
| 840 | 0.0247 | 0.0247 | 0.0247 | 0.0248 | 0.0246 | 0.0245 | 0.0244 | 0.0245 | 0.0247 | 0.0250 | 0.0239 | 0.0241 | 0.0241 | 0.0242 | 0.0240 |
| 850 | 0.0246 | 0.0247 | 0.0247 | 0.0247 | 0.0246 | 0.0244 | 0.0244 | 0.0245 | 0.0247 | 0.0250 | 0.0239 | 0.0241 | 0.0240 | 0.0242 | 0.0239 |
| 860 | 0.0246 | 0.0247 | 0.0246 | 0.0247 | 0.0246 | 0.0244 | 0.0244 | 0.0245 | 0.0246 | 0.0249 | 0.0239 | 0.0240 | 0.0240 | 0.0241 | 0.0239 |

TABLE 3. Compton component of the mass-energy absorption coefficient (cm/g) in the energy region 1 keV–1 MeV—Continued

| <i>E</i> (keV) | Os | Ir | Pt | Au | Hg | Tl | Pb | Bi | Po | At | Rn | Fr | Ra | Ac | Th |
|----------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 870 | 0.0246 | 0.0246 | 0.0246 | 0.0247 | 0.0245 | 0.0244 | 0.0243 | 0.0244 | 0.0246 | 0.0249 | 0.0238 | 0.0240 | 0.0239 | 0.0241 | 0.0238 |
| 880 | 0.0245 | 0.0246 | 0.0245 | 0.0246 | 0.0245 | 0.0243 | 0.0243 | 0.0244 | 0.0246 | 0.0248 | 0.0238 | 0.0239 | 0.0239 | 0.0241 | 0.0238 |
| 890 | 0.0245 | 0.0245 | 0.0245 | 0.0246 | 0.0244 | 0.0243 | 0.0243 | 0.0243 | 0.0245 | 0.0248 | 0.0237 | 0.0239 | 0.0239 | 0.0240 | 0.0238 |
| 900 | 0.0244 | 0.0245 | 0.0245 | 0.0245 | 0.0244 | 0.0242 | 0.0242 | 0.0243 | 0.0245 | 0.0248 | 0.0237 | 0.0239 | 0.0238 | 0.0240 | 0.0237 |
| 910 | 0.0244 | 0.0245 | 0.0244 | 0.0245 | 0.0244 | 0.0242 | 0.0242 | 0.0243 | 0.0244 | 0.0247 | 0.0237 | 0.0238 | 0.0238 | 0.0239 | 0.0237 |
| 920 | 0.0244 | 0.0244 | 0.0244 | 0.0245 | 0.0243 | 0.0242 | 0.0241 | 0.0242 | 0.0244 | 0.0247 | 0.0236 | 0.0238 | 0.0237 | 0.0239 | 0.0236 |
| 930 | 0.0243 | 0.0244 | 0.0243 | 0.0244 | 0.0243 | 0.0241 | 0.0241 | 0.0242 | 0.0244 | 0.0246 | 0.0236 | 0.0238 | 0.0237 | 0.0239 | 0.0236 |
| 940 | 0.0243 | 0.0243 | 0.0243 | 0.0244 | 0.0242 | 0.0241 | 0.0241 | 0.0241 | 0.0243 | 0.0246 | 0.0235 | 0.0237 | 0.0237 | 0.0238 | 0.0236 |
| 950 | 0.0242 | 0.0243 | 0.0243 | 0.0243 | 0.0242 | 0.0240 | 0.0240 | 0.0241 | 0.0243 | 0.0246 | 0.0235 | 0.0237 | 0.0236 | 0.0238 | 0.0235 |
| 960 | 0.0242 | 0.0243 | 0.0242 | 0.0243 | 0.0242 | 0.0240 | 0.0240 | 0.0241 | 0.0242 | 0.0245 | 0.0235 | 0.0236 | 0.0236 | 0.0237 | 0.0235 |
| 970 | 0.0242 | 0.0242 | 0.0242 | 0.0243 | 0.0241 | 0.0240 | 0.0239 | 0.0240 | 0.0242 | 0.0245 | 0.0234 | 0.0236 | 0.0235 | 0.0237 | 0.0234 |
| 980 | 0.0241 | 0.0242 | 0.0241 | 0.0242 | 0.0241 | 0.0239 | 0.0239 | 0.0240 | 0.0241 | 0.0244 | 0.0234 | 0.0236 | 0.0235 | 0.0237 | 0.0234 |
| 990 | 0.0241 | 0.0241 | 0.0241 | 0.0242 | 0.0240 | 0.0239 | 0.0239 | 0.0239 | 0.0241 | 0.0244 | 0.0233 | 0.0235 | 0.0235 | 0.0236 | 0.0234 |
| 1000 | 0.0240 | 0.0241 | 0.0241 | 0.0241 | 0.0240 | 0.0238 | 0.0238 | 0.0239 | 0.0241 | 0.0243 | 0.0233 | 0.0235 | 0.0234 | 0.0236 | 0.0233 |
| <i>E</i> (keV) | Pa | U | Np | Pu | Am | Cm | Bk | Cf | Es | Fm | | | | | |
| 1 | 0.0003 | 0.0003 | 0.0003 | 0.0003 | 0.0003 | 0.0003 | 0.0003 | 0.0003 | 0.0003 | 0.0003 | | | | | |
| 2 | 0.0007 | 0.0006 | 0.0007 | 0.0006 | 0.0006 | 0.0006 | 0.0006 | 0.0006 | 0.0006 | 0.0007 | | | | | |
| 3 | 0.0010 | 0.0010 | 0.0010 | 0.0010 | 0.0010 | 0.0010 | 0.0010 | 0.0010 | 0.0010 | 0.0010 | | | | | |
| 4 | 0.0013 | 0.0013 | 0.0013 | 0.0013 | 0.0013 | 0.0013 | 0.0013 | 0.0013 | 0.0013 | 0.0013 | | | | | |
| 5 | 0.0016 | 0.0016 | 0.0016 | 0.0016 | 0.0016 | 0.0016 | 0.0016 | 0.0016 | 0.0016 | 0.0016 | | | | | |
| 6 | 0.0019 | 0.0019 | 0.0019 | 0.0019 | 0.0019 | 0.0019 | 0.0019 | 0.0019 | 0.0019 | 0.0019 | | | | | |
| 7 | 0.0022 | 0.0022 | 0.0022 | 0.0022 | 0.0022 | 0.0022 | 0.0022 | 0.0022 | 0.0022 | 0.0022 | | | | | |
| 8 | 0.0025 | 0.0024 | 0.0025 | 0.0025 | 0.0025 | 0.0025 | 0.0025 | 0.0025 | 0.0025 | 0.0025 | | | | | |
| 9 | 0.0028 | 0.0027 | 0.0028 | 0.0027 | 0.0028 | 0.0027 | 0.0027 | 0.0027 | 0.0028 | 0.0028 | | | | | |
| 10 | 0.0031 | 0.0030 | 0.0031 | 0.0030 | 0.0030 | 0.0030 | 0.0030 | 0.0030 | 0.0030 | 0.0031 | | | | | |
| 20 | 0.0057 | 0.0056 | 0.0057 | 0.0056 | 0.0056 | 0.0056 | 0.0056 | 0.0056 | 0.0056 | 0.0057 | | | | | |
| 30 | 0.0079 | 0.0078 | 0.0079 | 0.0078 | 0.0079 | 0.0078 | 0.0078 | 0.0079 | 0.0078 | 0.0080 | | | | | |
| 40 | 0.0099 | 0.0097 | 0.0098 | 0.0097 | 0.0098 | 0.0097 | 0.0098 | 0.0098 | 0.0098 | 0.0099 | | | | | |
| 50 | 0.0116 | 0.0113 | 0.0115 | 0.0114 | 0.0115 | 0.0114 | 0.0114 | 0.0114 | 0.0115 | 0.0116 | | | | | |
| 60 | 0.0130 | 0.0128 | 0.0130 | 0.0128 | 0.0129 | 0.0128 | 0.0129 | 0.0129 | 0.0129 | 0.0131 | | | | | |
| 70 | 0.0143 | 0.0140 | 0.0143 | 0.0141 | 0.0142 | 0.0141 | 0.0142 | 0.0142 | 0.0142 | 0.0144 | | | | | |
| 80 | 0.0154 | 0.0152 | 0.0154 | 0.0152 | 0.0153 | 0.0152 | 0.0153 | 0.0153 | 0.0153 | 0.0155 | | | | | |
| 90 | 0.0164 | 0.0161 | 0.0164 | 0.0162 | 0.0163 | 0.0162 | 0.0163 | 0.0163 | 0.0163 | 0.0165 | | | | | |
| 100 | 0.0173 | 0.0170 | 0.0173 | 0.0171 | 0.0172 | 0.0171 | 0.0171 | 0.0171 | 0.0172 | 0.0174 | | | | | |
| 110 | 0.0181 | 0.0178 | 0.0181 | 0.0179 | 0.0180 | 0.0179 | 0.0179 | 0.0180 | 0.0179 | 0.0182 | | | | | |
| 120 | 0.0188 | 0.0185 | 0.0188 | 0.0186 | 0.0187 | 0.0186 | 0.0186 | 0.0187 | 0.0186 | 0.0189 | | | | | |
| 130 | 0.0195 | 0.0191 | 0.0194 | 0.0192 | 0.0193 | 0.0192 | 0.0192 | 0.0193 | 0.0193 | 0.0195 | | | | | |
| 140 | 0.0200 | 0.0196 | 0.0199 | 0.0198 | 0.0199 | 0.0198 | 0.0198 | 0.0198 | 0.0198 | 0.0201 | | | | | |
| 150 | 0.0205 | 0.0201 | 0.0205 | 0.0203 | 0.0204 | 0.0203 | 0.0203 | 0.0203 | 0.0203 | 0.0206 | | | | | |
| 160 | 0.0210 | 0.0206 | 0.0209 | 0.0207 | 0.0208 | 0.0207 | 0.0208 | 0.0208 | 0.0208 | 0.0211 | | | | | |
| 170 | 0.0214 | 0.0210 | 0.0213 | 0.0211 | 0.0212 | 0.0211 | 0.0212 | 0.0212 | 0.0212 | 0.0215 | | | | | |
| 180 | 0.0218 | 0.0214 | 0.0217 | 0.0215 | 0.0216 | 0.0215 | 0.0215 | 0.0216 | 0.0215 | 0.0218 | | | | | |
| 190 | 0.0221 | 0.0217 | 0.0220 | 0.0218 | 0.0219 | 0.0218 | 0.0219 | 0.0219 | 0.0219 | 0.0222 | | | | | |
| 200 | 0.0224 | 0.0220 | 0.0223 | 0.0221 | 0.0222 | 0.0221 | 0.0222 | 0.0222 | 0.0222 | 0.0225 | | | | | |
| 210 | 0.0227 | 0.0223 | 0.0226 | 0.0224 | 0.0225 | 0.0224 | 0.0225 | 0.0225 | 0.0225 | 0.0228 | | | | | |
| 220 | 0.0230 | 0.0225 | 0.0229 | 0.0226 | 0.0228 | 0.0226 | 0.0227 | 0.0227 | 0.0227 | 0.0230 | | | | | |
| 230 | 0.0232 | 0.0227 | 0.0231 | 0.0229 | 0.0230 | 0.0229 | 0.0229 | 0.0230 | 0.0229 | 0.0233 | | | | | |
| 240 | 0.0234 | 0.0229 | 0.0233 | 0.0231 | 0.0232 | 0.0231 | 0.0231 | 0.0232 | 0.0231 | 0.0235 | | | | | |
| 250 | 0.0236 | 0.0231 | 0.0235 | 0.0233 | 0.0234 | 0.0233 | 0.0233 | 0.0234 | 0.0233 | 0.0237 | | | | | |
| 260 | 0.0238 | 0.0233 | 0.0237 | 0.0234 | 0.0236 | 0.0234 | 0.0235 | 0.0235 | 0.0235 | 0.0238 | | | | | |
| 270 | 0.0239 | 0.0235 | 0.0238 | 0.0236 | 0.0237 | 0.0236 | 0.0236 | 0.0237 | 0.0237 | 0.0240 | | | | | |
| 280 | 0.0241 | 0.0236 | 0.0240 | 0.0237 | 0.0239 | 0.0237 | 0.0238 | 0.0238 | 0.0238 | 0.0241 | | | | | |
| 290 | 0.0242 | 0.0237 | 0.0241 | 0.0238 | 0.0240 | 0.0239 | 0.0239 | 0.0240 | 0.0239 | 0.0243 | | | | | |
| 300 | 0.0243 | 0.0238 | 0.0242 | 0.0240 | 0.0241 | 0.0240 | 0.0240 | 0.0241 | 0.0240 | 0.0244 | | | | | |
| 310 | 0.0244 | 0.0239 | 0.0243 | 0.0241 | 0.0242 | 0.0241 | 0.0241 | 0.0242 | 0.0241 | 0.0245 | | | | | |
| 320 | 0.0245 | 0.0240 | 0.0244 | 0.0242 | 0.0243 | 0.0242 | 0.0242 | 0.0243 | 0.0242 | 0.0246 | | | | | |
| 330 | 0.0246 | 0.0241 | 0.0245 | 0.0243 | 0.0244 | 0.0243 | 0.0243 | 0.0244 | 0.0243 | 0.0247 | | | | | |
| 340 | 0.0247 | 0.0242 | 0.0246 | 0.0243 | 0.0245 | 0.0243 | 0.0244 | 0.0244 | 0.0244 | 0.0248 | | | | | |
| 350 | 0.0247 | 0.0243 | 0.0246 | 0.0244 | 0.0246 | 0.0244 | 0.0245 | 0.0245 | 0.0245 | 0.0248 | | | | | |
| 360 | 0.0248 | 0.0243 | 0.0247 | 0.0245 | 0.0246 | 0.0245 | 0.0245 | 0.0246 | 0.0245 | 0.0249 | | | | | |
| 370 | 0.0249 | 0.0244 | 0.0248 | 0.0245 | 0.0247 | 0.0245 | 0.0246 | 0.0246 | 0.0246 | 0.0249 | | | | | |
| 380 | 0.0249 | 0.0244 | 0.0248 | 0.0246 | 0.0247 | 0.0246 | 0.0246 | 0.0247 | 0.0247 | 0.0250 | | | | | |
| 390 | 0.0250 | 0.0245 | 0.0249 | 0.0246 | 0.0248 | 0.0246 | 0.0247 | 0.0247 | 0.0247 | 0.0250 | | | | | |

TABLE 3. Compton component of the mass-energy absorption coefficient (cm/g) in the energy region 1 keV–1 MeV—Continued

| <i>E</i> (keV) | Pa | U | Np | Pu | Am | Cm | Bk | Cf | Es | Fm |
|----------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 400 | 0.0250 | 0.0245 | 0.0249 | 0.0247 | 0.0248 | 0.0247 | 0.0247 | 0.0248 | 0.0247 | 0.0251 |
| 410 | 0.0250 | 0.0246 | 0.0249 | 0.0247 | 0.0248 | 0.0247 | 0.0248 | 0.0248 | 0.0248 | 0.0251 |
| 420 | 0.0251 | 0.0246 | 0.0250 | 0.0247 | 0.0249 | 0.0247 | 0.0248 | 0.0248 | 0.0248 | 0.0251 |
| 430 | 0.0251 | 0.0246 | 0.0250 | 0.0247 | 0.0249 | 0.0248 | 0.0248 | 0.0249 | 0.0248 | 0.0252 |
| 440 | 0.0251 | 0.0246 | 0.0250 | 0.0248 | 0.0249 | 0.0248 | 0.0248 | 0.0249 | 0.0248 | 0.0252 |
| 450 | 0.0251 | 0.0247 | 0.0250 | 0.0248 | 0.0249 | 0.0248 | 0.0249 | 0.0249 | 0.0249 | 0.0252 |
| 460 | 0.0251 | 0.0247 | 0.0250 | 0.0248 | 0.0249 | 0.0248 | 0.0249 | 0.0249 | 0.0249 | 0.0252 |
| 470 | 0.0252 | 0.0247 | 0.0251 | 0.0248 | 0.0250 | 0.0248 | 0.0249 | 0.0249 | 0.0249 | 0.0252 |
| 480 | 0.0252 | 0.0247 | 0.0251 | 0.0248 | 0.0250 | 0.0248 | 0.0249 | 0.0249 | 0.0249 | 0.0252 |
| 490 | 0.0252 | 0.0247 | 0.0251 | 0.0248 | 0.0250 | 0.0248 | 0.0249 | 0.0249 | 0.0249 | 0.0252 |
| 500 | 0.0252 | 0.0247 | 0.0251 | 0.0248 | 0.0250 | 0.0248 | 0.0249 | 0.0249 | 0.0249 | 0.0252 |
| 510 | 0.0252 | 0.0247 | 0.0251 | 0.0248 | 0.0250 | 0.0248 | 0.0249 | 0.0249 | 0.0249 | 0.0252 |
| 520 | 0.0252 | 0.0247 | 0.0251 | 0.0248 | 0.0250 | 0.0248 | 0.0249 | 0.0249 | 0.0249 | 0.0252 |
| 530 | 0.0252 | 0.0247 | 0.0251 | 0.0248 | 0.0250 | 0.0248 | 0.0249 | 0.0249 | 0.0249 | 0.0252 |
| 540 | 0.0252 | 0.0247 | 0.0251 | 0.0248 | 0.0250 | 0.0248 | 0.0249 | 0.0249 | 0.0249 | 0.0252 |
| 550 | 0.0251 | 0.0247 | 0.0250 | 0.0248 | 0.0249 | 0.0248 | 0.0249 | 0.0249 | 0.0249 | 0.0252 |
| 560 | 0.0251 | 0.0247 | 0.0250 | 0.0248 | 0.0249 | 0.0248 | 0.0249 | 0.0249 | 0.0249 | 0.0252 |
| 570 | 0.0251 | 0.0246 | 0.0250 | 0.0248 | 0.0249 | 0.0248 | 0.0248 | 0.0249 | 0.0248 | 0.0252 |
| 580 | 0.0251 | 0.0246 | 0.0250 | 0.0248 | 0.0249 | 0.0248 | 0.0248 | 0.0249 | 0.0248 | 0.0252 |
| 590 | 0.0251 | 0.0246 | 0.0250 | 0.0247 | 0.0249 | 0.0247 | 0.0248 | 0.0249 | 0.0248 | 0.0252 |
| 600 | 0.0251 | 0.0246 | 0.0250 | 0.0247 | 0.0249 | 0.0247 | 0.0248 | 0.0248 | 0.0248 | 0.0251 |
| 610 | 0.0250 | 0.0246 | 0.0249 | 0.0247 | 0.0249 | 0.0247 | 0.0248 | 0.0248 | 0.0248 | 0.0251 |
| 620 | 0.0250 | 0.0246 | 0.0249 | 0.0247 | 0.0248 | 0.0247 | 0.0248 | 0.0248 | 0.0248 | 0.0251 |
| 630 | 0.0250 | 0.0245 | 0.0249 | 0.0247 | 0.0248 | 0.0247 | 0.0247 | 0.0248 | 0.0247 | 0.0251 |
| 640 | 0.0250 | 0.0245 | 0.0249 | 0.0246 | 0.0248 | 0.0246 | 0.0247 | 0.0248 | 0.0247 | 0.0251 |
| 650 | 0.0250 | 0.0245 | 0.0249 | 0.0246 | 0.0248 | 0.0246 | 0.0247 | 0.0247 | 0.0247 | 0.0250 |
| 660 | 0.0249 | 0.0245 | 0.0248 | 0.0246 | 0.0247 | 0.0246 | 0.0247 | 0.0247 | 0.0247 | 0.0250 |
| 670 | 0.0249 | 0.0244 | 0.0248 | 0.0246 | 0.0247 | 0.0246 | 0.0246 | 0.0247 | 0.0246 | 0.0250 |
| 680 | 0.0249 | 0.0244 | 0.0248 | 0.0245 | 0.0247 | 0.0245 | 0.0246 | 0.0246 | 0.0246 | 0.0250 |
| 690 | 0.0248 | 0.0244 | 0.0247 | 0.0245 | 0.0247 | 0.0245 | 0.0246 | 0.0246 | 0.0246 | 0.0249 |
| 700 | 0.0248 | 0.0243 | 0.0247 | 0.0245 | 0.0246 | 0.0245 | 0.0245 | 0.0246 | 0.0246 | 0.0249 |
| 710 | 0.0248 | 0.0243 | 0.0247 | 0.0244 | 0.0246 | 0.0245 | 0.0245 | 0.0246 | 0.0245 | 0.0249 |
| 720 | 0.0248 | 0.0243 | 0.0247 | 0.0244 | 0.0246 | 0.0244 | 0.0245 | 0.0245 | 0.0245 | 0.0248 |
| 730 | 0.0247 | 0.0243 | 0.0246 | 0.0244 | 0.0245 | 0.0244 | 0.0245 | 0.0245 | 0.0245 | 0.0248 |
| 740 | 0.0247 | 0.0242 | 0.0246 | 0.0243 | 0.0245 | 0.0244 | 0.0244 | 0.0245 | 0.0244 | 0.0248 |
| 750 | 0.0247 | 0.0242 | 0.0246 | 0.0243 | 0.0245 | 0.0243 | 0.0244 | 0.0244 | 0.0244 | 0.0247 |
| 760 | 0.0246 | 0.0242 | 0.0245 | 0.0243 | 0.0244 | 0.0243 | 0.0244 | 0.0244 | 0.0244 | 0.0247 |
| 770 | 0.0246 | 0.0241 | 0.0245 | 0.0242 | 0.0244 | 0.0243 | 0.0243 | 0.0244 | 0.0243 | 0.0247 |
| 780 | 0.0246 | 0.0241 | 0.0245 | 0.0242 | 0.0244 | 0.0242 | 0.0243 | 0.0243 | 0.0243 | 0.0246 |
| 790 | 0.0245 | 0.0241 | 0.0244 | 0.0242 | 0.0243 | 0.0242 | 0.0242 | 0.0243 | 0.0243 | 0.0246 |
| 800 | 0.0245 | 0.0240 | 0.0244 | 0.0241 | 0.0243 | 0.0242 | 0.0242 | 0.0243 | 0.0242 | 0.0246 |
| 810 | 0.0244 | 0.0240 | 0.0243 | 0.0241 | 0.0243 | 0.0241 | 0.0242 | 0.0242 | 0.0242 | 0.0245 |
| 820 | 0.0244 | 0.0239 | 0.0243 | 0.0241 | 0.0242 | 0.0241 | 0.0241 | 0.0242 | 0.0241 | 0.0245 |
| 830 | 0.0244 | 0.0239 | 0.0243 | 0.0240 | 0.0242 | 0.0240 | 0.0241 | 0.0242 | 0.0241 | 0.0244 |
| 840 | 0.0243 | 0.0239 | 0.0242 | 0.0240 | 0.0241 | 0.0240 | 0.0241 | 0.0241 | 0.0241 | 0.0244 |
| 850 | 0.0243 | 0.0238 | 0.0242 | 0.0240 | 0.0241 | 0.0240 | 0.0240 | 0.0241 | 0.0240 | 0.0244 |
| 860 | 0.0243 | 0.0238 | 0.0242 | 0.0239 | 0.0241 | 0.0239 | 0.0240 | 0.0240 | 0.0240 | 0.0243 |
| 870 | 0.0242 | 0.0238 | 0.0241 | 0.0239 | 0.0240 | 0.0239 | 0.0240 | 0.0240 | 0.0240 | 0.0243 |
| 880 | 0.0242 | 0.0237 | 0.0241 | 0.0238 | 0.0240 | 0.0239 | 0.0239 | 0.0240 | 0.0239 | 0.0243 |
| 890 | 0.0241 | 0.0237 | 0.0240 | 0.0238 | 0.0240 | 0.0238 | 0.0239 | 0.0239 | 0.0239 | 0.0242 |
| 900 | 0.0241 | 0.0236 | 0.0240 | 0.0238 | 0.0239 | 0.0238 | 0.0238 | 0.0239 | 0.0238 | 0.0242 |
| 910 | 0.0241 | 0.0236 | 0.0240 | 0.0237 | 0.0239 | 0.0237 | 0.0238 | 0.0238 | 0.0238 | 0.0241 |
| 920 | 0.0240 | 0.0236 | 0.0239 | 0.0237 | 0.0238 | 0.0237 | 0.0238 | 0.0238 | 0.0238 | 0.0241 |
| 930 | 0.0240 | 0.0235 | 0.0239 | 0.0237 | 0.0238 | 0.0237 | 0.0237 | 0.0238 | 0.0237 | 0.0241 |
| 940 | 0.0239 | 0.0235 | 0.0238 | 0.0236 | 0.0238 | 0.0236 | 0.0237 | 0.0237 | 0.0237 | 0.0240 |
| 950 | 0.0239 | 0.0234 | 0.0238 | 0.0236 | 0.0237 | 0.0236 | 0.0236 | 0.0237 | 0.0236 | 0.0240 |
| 960 | 0.0239 | 0.0234 | 0.0238 | 0.0235 | 0.0237 | 0.0235 | 0.0236 | 0.0236 | 0.0236 | 0.0239 |
| 970 | 0.0238 | 0.0234 | 0.0237 | 0.0235 | 0.0236 | 0.0235 | 0.0236 | 0.0236 | 0.0236 | 0.0239 |
| 980 | 0.0238 | 0.0233 | 0.0237 | 0.0235 | 0.0236 | 0.0235 | 0.0235 | 0.0236 | 0.0235 | 0.0239 |
| 990 | 0.0237 | 0.0233 | 0.0236 | 0.0234 | 0.0236 | 0.0234 | 0.0235 | 0.0235 | 0.0235 | 0.0238 |
| 1000 | 0.0237 | 0.0232 | 0.0236 | 0.0234 | 0.0235 | 0.0234 | 0.0234 | 0.0235 | 0.0234 | 0.0238 |

TABLE 4. The momentum resolution (ΔP_z) and Doppler broadening in the angular region 0° – 180°

| θ | Ca $K\alpha$ 3.69 (keV) | | Ti $K\alpha$ 4.52 (keV) | | | Cr $K\alpha$ 5.42 (keV) | | | Cu $K\alpha$ 8.04 (keV) | | | Mo $K\alpha$ 17.44 (keV) | | | |
|----------|---------------------------------|---------------------------------|-------------------------------|---------------------------------|---------------------------------|-------------------------------|---------------------------------|---------------------------------|-------------------------------|---------------------------------|---------------------------------|-------------------------------|---------------------------------|---------------------------------|-------------------------------|
| | $\partial P_z/\partial\omega_1$ | $\partial P_z/\partial\omega_2$ | $\partial P_z/\partial\theta$ | $\partial P_z/\partial\omega_1$ | $\partial P_z/\partial\omega_2$ | $\partial P_z/\partial\theta$ | $\partial P_z/\partial\omega_1$ | $\partial P_z/\partial\omega_2$ | $\partial P_z/\partial\theta$ | $\partial P_z/\partial\omega_1$ | $\partial P_z/\partial\omega_2$ | $\partial P_z/\partial\theta$ | $\partial P_z/\partial\omega_1$ | $\partial P_z/\partial\omega_2$ | $\partial P_z/\partial\theta$ |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 5 | 425.7932 | 425.8166 | 0.9883 | 348.5298 | 348.5531 | 1.2074 | 290.3653 | 290.3887 | 1.4493 | 195.3925 | 195.4159 | 2.1537 | 90.0857 | 90.1091 | 4.6709 |
| 10 | 213.0904 | 213.1372 | 0.9855 | 174.4219 | 174.4687 | 1.2039 | 145.3120 | 145.3588 | 1.4451 | 97.7804 | 97.8271 | 2.1474 | 45.0768 | 45.1235 | 4.6567 |
| 15 | 142.2761 | 142.3460 | 0.9807 | 116.4562 | 116.5261 | 1.1981 | 97.0187 | 97.0887 | 1.4380 | 65.2807 | 65.3506 | 2.1368 | 30.0891 | 30.1590 | 4.6330 |
| 20 | 106.9343 | 107.0274 | 0.9741 | 87.5263 | 87.6194 | 1.1899 | 72.9158 | 73.0089 | 1.4282 | 49.0592 | 49.1523 | 2.1221 | 22.6068 | 22.6998 | 4.5999 |
| 25 | 85.7822 | 85.8981 | 0.9655 | 70.2112 | 70.3272 | 1.1795 | 58.4893 | 58.6053 | 1.4156 | 39.3494 | 39.4654 | 2.1032 | 18.1267 | 18.2427 | 4.5576 |
| 30 | 71.7253 | 71.8641 | 0.9552 | 58.7041 | 58.8428 | 1.1668 | 48.9016 | 49.0403 | 1.4003 | 32.8957 | 33.0344 | 2.0802 | 15.1480 | 15.2867 | 4.5061 |
| 35 | 61.7237 | 61.8848 | 0.9429 | 50.5162 | 50.6774 | 1.1518 | 42.0792 | 42.2403 | 1.3823 | 28.3029 | 28.4640 | 2.0532 | 13.0274 | 13.1886 | 4.4456 |
| 40 | 54.2571 | 54.4404 | 0.9289 | 44.4035 | 44.5868 | 1.1346 | 36.9856 | 37.1689 | 1.3616 | 24.8735 | 25.0568 | 2.0222 | 11.4432 | 11.6265 | 4.3763 |
| 45 | 48.4812 | 48.6863 | 0.9131 | 39.6747 | 39.8798 | 1.1153 | 33.0451 | 33.2502 | 1.3383 | 22.2200 | 22.4251 | 1.9873 | 10.2169 | 10.4220 | 4.2984 |
| 50 | 43.8896 | 44.1161 | 0.8955 | 35.9153 | 36.1418 | 1.0938 | 29.9121 | 30.1386 | 1.3124 | 20.1100 | 20.3365 | 1.9485 | 9.2412 | 9.4677 | 4.2120 |
| 55 | 40.1599 | 40.4073 | 0.8763 | 32.8614 | 33.1089 | 1.0702 | 27.3670 | 27.6145 | 1.2840 | 18.3957 | 18.6431 | 1.9060 | 8.4480 | 8.6955 | 4.1176 |
| 60 | 37.0774 | 37.3454 | 0.8553 | 30.3373 | 30.6053 | 1.0445 | 25.2634 | 25.5313 | 1.2532 | 16.9784 | 17.2464 | 1.8599 | 7.7919 | 8.0598 | 4.0152 |
| 65 | 34.4935 | 34.7815 | 0.8328 | 28.2214 | 28.5094 | 1.0169 | 23.4997 | 23.7877 | 1.2200 | 15.7900 | 16.0780 | 1.8103 | 7.2413 | 7.5293 | 3.9053 |
| 70 | 32.3023 | 32.6097 | 0.8086 | 26.4269 | 26.7343 | 0.9874 | 22.0039 | 22.3113 | 1.1845 | 14.7819 | 15.0893 | 1.7572 | 6.7740 | 7.0814 | 3.7880 |
| 75 | 30.4258 | 30.7521 | 0.7830 | 24.8901 | 25.2164 | 0.9560 | 20.7228 | 21.0491 | 1.1467 | 13.9183 | 14.2446 | 1.7008 | 6.3734 | 6.6997 | 3.6636 |
| 80 | 28.8061 | 29.1506 | 0.7558 | 23.5635 | 23.9080 | 0.9227 | 19.6168 | 19.9613 | 1.1068 | 13.1726 | 13.5171 | 1.6412 | 6.0273 | 6.3718 | 3.5326 |
| 85 | 27.3986 | 27.7607 | 0.7272 | 22.4106 | 22.7727 | 0.8878 | 18.6556 | 19.0177 | 1.0648 | 12.5244 | 12.8865 | 1.5786 | 5.7263 | 6.0883 | 3.3951 |
| 90 | 26.1689 | 26.5479 | 0.6973 | 21.4033 | 21.7823 | 0.8512 | 17.8157 | 18.1947 | 1.0208 | 11.9579 | 12.3369 | 1.5131 | 5.4630 | 5.8419 | 3.2516 |
| 95 | 25.0898 | 25.4850 | 0.6660 | 20.5193 | 20.9145 | 0.8130 | 17.0786 | 17.4738 | 0.9749 | 11.4606 | 11.8558 | 1.4447 | 5.2317 | 5.6268 | 3.1024 |
| 100 | 24.1398 | 24.5504 | 0.6336 | 19.7410 | 20.1516 | 0.7733 | 16.4296 | 16.8402 | 0.9272 | 11.0227 | 11.4332 | 1.3737 | 5.0279 | 5.4384 | 2.9477 |
| 105 | 23.3014 | 23.7266 | 0.5999 | 19.0541 | 19.4793 | 0.7321 | 15.8567 | 16.2819 | 0.8778 | 10.6360 | 11.0613 | 1.3003 | 4.8479 | 5.2731 | 2.7879 |
| 110 | 22.5604 | 22.9995 | 0.5651 | 18.4470 | 18.8860 | 0.6896 | 15.3504 | 15.7894 | 0.8268 | 10.2942 | 10.7333 | 1.2244 | 4.6886 | 5.1277 | 2.6234 |
| 115 | 21.9053 | 22.3574 | 0.5293 | 17.9102 | 18.3623 | 0.6458 | 14.9026 | 15.3547 | 0.7742 | 9.9920 | 10.4440 | 1.1464 | 4.5477 | 4.9998 | 2.4544 |
| 120 | 21.3265 | 21.7908 | 0.4924 | 17.4359 | 17.9001 | 0.6009 | 14.5070 | 14.9712 | 0.7203 | 9.7248 | 10.1890 | 1.0663 | 4.4231 | 4.8873 | 2.2814 |
| 125 | 20.8161 | 21.2916 | 0.4547 | 17.0176 | 17.4931 | 0.5548 | 14.1581 | 14.6335 | 0.6650 | 9.4891 | 9.9646 | 0.9843 | 4.3132 | 4.7886 | 2.1046 |
| 130 | 20.3674 | 20.8533 | 0.4161 | 16.6499 | 17.1357 | 0.5077 | 13.8513 | 14.3372 | 0.6086 | 9.2819 | 9.7678 | 0.9006 | 4.2165 | 4.7023 | 1.9244 |
| 135 | 19.9750 | 20.4703 | 0.3768 | 16.3283 | 16.8235 | 0.4597 | 13.5830 | 14.0783 | 0.5510 | 9.1007 | 9.5960 | 0.8152 | 4.1318 | 4.6271 | 1.7411 |
| 140 | 19.6343 | 20.1381 | 0.3368 | 16.0490 | 16.5528 | 0.4109 | 13.3500 | 13.8538 | 0.4924 | 8.9433 | 9.4470 | 0.7285 | 4.0583 | 4.5620 | 1.5550 |
| 145 | 19.3415 | 19.8528 | 0.2961 | 15.8090 | 16.3203 | 0.3613 | 13.1498 | 13.6611 | 0.4330 | 8.8080 | 9.3192 | 0.6404 | 3.9950 | 4.5063 | 1.3664 |
| 150 | 19.0933 | 19.6112 | 0.2550 | 15.6056 | 16.1234 | 0.3110 | 12.9801 | 13.4979 | 0.3727 | 8.6933 | 9.2111 | 0.5513 | 3.9414 | 4.4593 | 1.1757 |
| 155 | 18.8873 | 19.4107 | 0.2133 | 15.4367 | 15.9601 | 0.2602 | 12.8392 | 13.3626 | 0.3118 | 8.5980 | 9.1214 | 0.4611 | 3.8969 | 4.4203 | 0.9831 |
| 160 | 18.7213 | 19.2493 | 0.1713 | 15.3007 | 15.8286 | 0.2089 | 12.7256 | 13.2536 | 0.2504 | 8.5213 | 9.0493 | 0.3702 | 3.8610 | 4.3890 | 0.7891 |
| 165 | 18.5937 | 19.1253 | 0.1289 | 15.1960 | 15.7276 | 0.1573 | 12.6383 | 13.1699 | 0.1884 | 8.4623 | 8.9939 | 0.2786 | 3.8334 | 4.3650 | 0.5938 |
| 170 | 18.5032 | 19.0374 | 0.0863 | 15.1219 | 15.6560 | 0.1053 | 12.5764 | 13.1106 | 0.1262 | 8.4205 | 8.9546 | 0.1866 | 3.8138 | 4.3480 | 0.3976 |
| 175 | 18.4490 | 18.9847 | 0.0436 | 15.0775 | 15.6131 | 0.0532 | 12.5394 | 13.0750 | 0.0637 | 8.3954 | 8.9311 | 0.0942 | 3.8021 | 4.3378 | 0.2007 |
| 180 | 0.0000 | 0.0000 | 0.0008 | 0.0000 | 0.0000 | 0.0010 | 0.0000 | 0.0000 | 0.0011 | 0.0000 | 0.0000 | 0.0017 | 0.0000 | 0.0000 | 0.0036 |

| θ | Ag $K\alpha$ 22.12 (keV) | | Sn $K\alpha$ 25.21 (keV) | | | Gd $K\alpha$ 42.76 (keV) | | | W $K\alpha$ 58.83 (keV) | | | Am-241 60 (keV) | | | |
|----------|---------------------------------|---------------------------------|-------------------------------|---------------------------------|---------------------------------|-------------------------------|---------------------------------|---------------------------------|-------------------------------|---------------------------------|---------------------------------|-------------------------------|---------------------------------|---------------------------------|-------------------------------|
| | $\partial P_z/\partial\omega_1$ | $\partial P_z/\partial\omega_2$ | $\partial P_z/\partial\theta$ | $\partial P_z/\partial\omega_1$ | $\partial P_z/\partial\omega_2$ | $\partial P_z/\partial\theta$ | $\partial P_z/\partial\omega_1$ | $\partial P_z/\partial\omega_2$ | $\partial P_z/\partial\theta$ | $\partial P_z/\partial\omega_1$ | $\partial P_z/\partial\omega_2$ | $\partial P_z/\partial\theta$ | $\partial P_z/\partial\omega_1$ | $\partial P_z/\partial\omega_2$ | $\partial P_z/\partial\theta$ |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 5 | 71.0793 | 71.1027 | 5.9197 | 62.3630 | 62.3863 | 6.7469 | 36.7471 | 36.7705 | 11.4486 | 26.7004 | 26.7237 | 15.7543 | 26.1805 | 26.2038 | 16.0670 |
| 10 | 35.5646 | 35.6113 | 5.9013 | 31.2022 | 31.2489 | 6.7258 | 18.3819 | 18.4286 | 11.4102 | 13.3536 | 13.4003 | 15.6985 | 13.0934 | 13.1401 | 16.0099 |
| 15 | 23.7375 | 23.8074 | 5.8708 | 20.8246 | 20.8945 | 6.6905 | 12.2640 | 12.3340 | 11.3466 | 8.9064 | 8.9763 | 15.6059 | 8.7326 | 8.8025 | 15.9150 |
| 20 | 17.8324 | 17.9255 | 5.8282 | 15.6428 | 15.7359 | 6.6414 | 9.2080 | 9.3010 | 11.2579 | 6.6840 | 6.7771 | 15.4769 | 6.5534 | 6.6464 | 15.7830 |
| 25 | 14.2963 | 14.4123 | 5.7736 | 12.5396 | 12.6556 | 6.5786 | 7.3768 | 7.4928 | 11.1446 | 5.3518 | 5.4677 | 15.3125 | 5.2470 | 5.3629 | 15.6146 |
| 30 | 11.9448 | 12.0835 | 5.7073 | 10.4757 | 10.6144 | 6.5022 | 6.1582 | 6.2969 | 11.0072 | 4.4646 | 4.6033 | 15.1134 | 4.3770 | 4.5156 | 15.4109 |
| 35 | 10.2703 | 10.4315 | 5.6294 | 9.0059 | 9.1670 | 6.4125 | 5.2897 | 5.4508 | 10.8464 | 3.8320 | 3.9931 | 14.8809 | 3.7565 | 3.9176 | 15.1729 |
| 40 | 9.0192 | 9.2025 | 5.5403 | 7.9075 | 8.0908 | 6.3100 | 4.6402 | 4.8234 | 10.6628 | 3.3585 | 3.5417 | 14.6162 | 3.2921 | 3.4753 | 14.9020 |
| 45 | 8.0504 | 8.2555 | 5.4402 | 7.0568 | 7.2619 | 6.1948 | 4.1367 | 4.3417 | 10.4573 | 2.9912 | 3.1961 | 14.3206 | 2.9319 | 3.1368 | 14.5997 |
| 50 | 7.2795 | 7.5059 | 5.3293 | 6.3798 | 6.6062 | 6.0674 | 3.7356 | 3.9620 | 10.2307 | 2.6984 | 2.9246 | 13.9958 | 2.6447 | 2.8710 | 14.2674 |
| 55 | 6.6525 | 6.9000 | 5.2082 | 5.8291 | 6.0765 | 5.9282 | 3.4091 | 3.6564 | 9.9840 | 2.4598 | 2.7070 | 13.6432 | 2.4106 | 2.6578 | 13.9069 |
| 60 | 6.1338 | 6.4017 | 5.0770 | 5.3734 | 5.6413 | 5.7776 | 3.1386 | 3.4064 | 9.7180 | 2.2620 | 2.5296 | 13.2644 | 2.2166 | 2.4842 | 13.5197 |
| 65 | 5.6984 | 5.9863 | 4.9362 | 4.9908 | 5.2787 | 5.6161 | 2.9113 | 3.1990 | 9.4339 | 2.0956 | 2.3832 | 12.8612 | 2.0534 | 2.3410 | 13.1075 |
| 70 | 5.3287 | 5.6361 | 4.7862 | 4.6659 | 4.9732 | 5.4441 | 2.7180 | 3.0252 | 9.1326 | 1.9541 | 2.2611 | 12.4352 | 1.9146 | 2.2216 | 12.6722 |
| 75 | 5.0117 | 5.3379 | 4.6274 | 4.3873 | 4.7135 | 5.2622 | 2.5522 | 2.8782 | 8.8152 | 1.8326 | 2.1584 | 11.9879 | 1.7954 | 2.1212 | 12.2153 |
| 80 | 4.7378 | 5.0822 | 4.4602 | 4.1464 | 4.4908 | 5.0708 | 2.4087 | 2.7529 | 8.4826 | 1.7274 | 2.0714 | 11.5211 | 1.6921 | 2.0361 | 11.7386 |
| 85 | 4.4994 | 4.8614 | 4.2850 | 3.9368 | 4.2988 | 4.8704 | 2.2837 | 2.6455 | 8.1359 | 1.6357 | 1.9973 | 11.0364 | 1.6022 | 1.9637 | 11.2437 |
| 90 | 4.2909 | 4.6698 | 4.1023 | 3.7534 | 4.1323 | 4.6615 | 2.1743 | 2.5529 | 7.7761 | 1.5554 | 1.9338 | 10.5351 | 1.5234 | 1.9018 | 10.7321 |
| 95 | 4.1077 | 4.5027 | 3.9125 | 3.5922 | 3.9873 | 4.4447 | 2.0780 | 2.4729 | 7.4041 | 1.4847 | 1.8793 | 10.0189 | 1.4540 | 1.8486 | 10.2053 |

TABLE 4. The momentum resolution (ΔP_z) and Doppler broadening in the angular region 0° – 180° —Continued

| | Ag $K\alpha$ 22.12 (keV) | | Sn $K\alpha$ 25.21 (keV) | | | Gd $K\alpha$ 42.76 (keV) | | | W $K\alpha$ 58.83 (keV) | | | Am-241 60 (keV) | | | |
|-----|-----------------------------|--------|-----------------------------|--------|--------|-----------------------------|--------|--------|----------------------------|--------|--------|--------------------|--------|--------|--------|
| 100 | 3.9462 | 4.3567 | 3.7160 | 3.4501 | 3.8606 | 4.2205 | 1.9931 | 2.4034 | 7.0210 | 1.4223 | 1.8324 | 9.4891 | 1.3928 | 1.8028 | 9.6649 |
| 105 | 3.8035 | 4.2286 | 3.5133 | 3.3246 | 3.7497 | 3.9893 | 1.9180 | 2.3429 | 6.6276 | 1.3672 | 1.7918 | 8.9470 | 1.3387 | 1.7633 | 9.1120 |
| 110 | 3.6772 | 4.1162 | 3.3048 | 3.2135 | 3.6525 | 3.7516 | 1.8515 | 2.2903 | 6.2248 | 1.3183 | 1.7568 | 8.3939 | 1.2907 | 1.7293 | 8.5479 |
| 115 | 3.5655 | 4.0175 | 3.0909 | 3.1152 | 3.5671 | 3.5080 | 1.7927 | 2.2445 | 5.8134 | 1.2750 | 1.7266 | 7.8308 | 1.2483 | 1.6998 | 7.9740 |
| 120 | 3.4667 | 3.9308 | 2.8720 | 3.0282 | 3.4923 | 3.2590 | 1.7406 | 2.2045 | 5.3944 | 1.2367 | 1.7005 | 7.2590 | 1.2107 | 1.6744 | 7.3912 |
| 125 | 3.3794 | 3.8549 | 2.6487 | 2.9514 | 3.4268 | 3.0049 | 1.6946 | 2.1698 | 4.9683 | 1.2029 | 1.6779 | 6.6794 | 1.1775 | 1.6525 | 6.8005 |
| 130 | 3.3027 | 3.7885 | 2.4212 | 2.8838 | 3.3696 | 2.7463 | 1.6541 | 2.1397 | 4.5360 | 1.1731 | 1.6586 | 6.0929 | 1.1483 | 1.6337 | 6.2030 |
| 135 | 3.2355 | 3.7307 | 2.1899 | 2.8247 | 3.3199 | 2.4836 | 1.6186 | 2.1137 | 4.0982 | 1.1470 | 1.6420 | 5.5003 | 1.1227 | 1.6176 | 5.5995 |
| 140 | 3.1772 | 3.6809 | 1.9554 | 2.7733 | 3.2770 | 2.2172 | 1.5878 | 2.0914 | 3.6555 | 1.1244 | 1.6278 | 4.9026 | 1.1005 | 1.6039 | 4.9907 |
| 145 | 3.1270 | 3.6382 | 1.7179 | 2.7291 | 3.2403 | 1.9476 | 1.5613 | 2.0724 | 3.2086 | 1.1049 | 1.6159 | 4.3004 | 1.0813 | 1.5924 | 4.3775 |
| 150 | 3.0844 | 3.6022 | 1.4778 | 2.6916 | 3.2094 | 1.6752 | 1.5388 | 2.0565 | 2.7580 | 1.0883 | 1.6060 | 3.6944 | 1.0651 | 1.5828 | 3.7604 |
| 155 | 3.0491 | 3.5725 | 1.2356 | 2.6604 | 3.1838 | 1.4005 | 1.5201 | 2.0434 | 2.3043 | 1.0746 | 1.5979 | 3.0852 | 1.0516 | 1.5749 | 3.1402 |
| 160 | 3.0206 | 3.5485 | 0.9915 | 2.6353 | 3.1633 | 1.1238 | 1.5050 | 2.0330 | 1.8481 | 1.0635 | 1.5914 | 2.4734 | 1.0407 | 1.5687 | 2.5175 |
| 165 | 2.9987 | 3.5302 | 0.7460 | 2.6160 | 3.1476 | 0.8455 | 1.4935 | 2.0250 | 1.3899 | 1.0550 | 1.5865 | 1.8596 | 1.0324 | 1.5639 | 1.8927 |
| 170 | 2.9831 | 3.5172 | 0.4995 | 2.6024 | 3.1365 | 0.5660 | 1.4852 | 2.0194 | 0.9303 | 1.0490 | 1.5831 | 1.2443 | 1.0265 | 1.5606 | 1.2664 |
| 175 | 2.9738 | 3.5095 | 0.2522 | 2.5942 | 3.1298 | 0.2858 | 1.4803 | 2.0160 | 0.4696 | 1.0454 | 1.5810 | 0.6280 | 1.0229 | 1.5586 | 0.6392 |
| 180 | 0.0000 | 0.0000 | 0.0045 | 0.0000 | 0.0000 | 0.0051 | 0.0000 | 0.0000 | 0.0084 | 0.0000 | 0.0000 | 0.0113 | 0.0000 | 0.0000 | 0.0115 |

| | Ce-141 145.44 (keV) | | | Hg-203 279.19 (keV) | | | Cr-51 320.08 (keV) | | | Cs-137 661.65 (keV) | | | Zn-65 1115.55 (keV) | | |
|----------|---------------------------------|---------------------------------|-------------------------------|---------------------------------|---------------------------------|-------------------------------|---------------------------------|---------------------------------|-------------------------------|---------------------------------|---------------------------------|-------------------------------|---------------------------------|---------------------------------|-------------------------------|
| θ | $\partial P_z/\partial\omega_1$ | $\partial P_z/\partial\omega_2$ | $\partial P_z/\partial\theta$ | $\partial P_z/\partial\omega_1$ | $\partial P_z/\partial\omega_2$ | $\partial P_z/\partial\theta$ | $\partial P_z/\partial\omega_1$ | $\partial P_z/\partial\omega_2$ | $\partial P_z/\partial\theta$ | $\partial P_z/\partial\omega_1$ | $\partial P_z/\partial\omega_2$ | $\partial P_z/\partial\theta$ | $\partial P_z/\partial\omega_1$ | $\partial P_z/\partial\omega_2$ | $\partial P_z/\partial\theta$ |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 5 | 10.8292 | 10.8526 | 38.8139 | 5.6241 | 5.6475 | 74.6307 | 4.9023 | 4.9257 | 85.5773 | 2.3638 | 2.3872 | 176.5995 | 1.3908 | 1.4140 | 297.4030 |
| 10 | 5.4098 | 5.4565 | 38.6321 | 2.8037 | 2.8504 | 74.1261 | 2.4421 | 2.4888 | 84.9381 | 1.1690 | 1.2155 | 174.0124 | 0.6788 | 0.7247 | 289.2203 |
| 15 | 3.6013 | 3.6712 | 38.3317 | 1.8601 | 1.9299 | 73.2991 | 1.6183 | 1.6881 | 83.8933 | 0.7658 | 0.8348 | 169.9019 | 0.4360 | 0.5034 | 276.8482 |
| 20 | 2.6957 | 2.7887 | 37.9165 | 1.3859 | 1.4786 | 72.1696 | 1.2039 | 1.2964 | 82.4723 | 0.5612 | 0.6522 | 164.5298 | 0.3119 | 0.3997 | 261.7108 |
| 25 | 2.1514 | 2.2672 | 37.3914 | 1.0997 | 1.2150 | 70.7636 | 0.9535 | 1.0685 | 80.7125 | 0.4367 | 0.5490 | 158.1959 | 0.2364 | 0.3434 | 245.1584 |
| 30 | 1.7878 | 1.9262 | 36.7628 | 0.9078 | 1.0453 | 69.1111 | 0.7854 | 0.9226 | 78.6567 | 0.3528 | 0.4857 | 151.1980 | 0.1860 | 0.3112 | 228.2512 |
| 35 | 1.5277 | 1.6884 | 36.0375 | 0.7700 | 0.9294 | 67.2446 | 0.6646 | 0.8234 | 76.3506 | 0.2925 | 0.4454 | 143.8032 | 0.1504 | 0.2931 | 211.7087 |
| 40 | 1.3324 | 1.5150 | 35.2233 | 0.6661 | 0.8470 | 65.1974 | 0.5735 | 0.7537 | 73.8397 | 0.2472 | 0.4196 | 136.2325 | 0.1242 | 0.2841 | 195.9567 |
| 45 | 1.1804 | 1.3845 | 34.3281 | 0.5851 | 0.7870 | 63.0020 | 0.5024 | 0.7035 | 71.1676 | 0.2122 | 0.4036 | 128.6566 | 0.1044 | 0.2813 | 181.2063 |
| 50 | 1.0588 | 1.2841 | 33.3601 | 0.5203 | 0.7428 | 60.6890 | 0.4456 | 0.6670 | 68.3745 | 0.1845 | 0.3946 | 121.1991 | 0.0891 | 0.2831 | 167.5279 |
| 55 | 0.9595 | 1.2055 | 32.3276 | 0.4673 | 0.7099 | 58.2865 | 0.3991 | 0.6405 | 65.4960 | 0.1622 | 0.3908 | 113.9439 | 0.0771 | 0.2882 | 154.9076 |
| 60 | 0.8770 | 1.1432 | 31.2383 | 0.4233 | 0.6856 | 55.8194 | 0.3606 | 0.6215 | 62.5631 | 0.1440 | 0.3908 | 106.9432 | 0.0674 | 0.2959 | 143.2859 |
| 65 | 0.8074 | 1.0934 | 30.1000 | 0.3862 | 0.6679 | 53.3093 | 0.3283 | 0.6083 | 59.6016 | 0.1290 | 0.3938 | 100.2254 | 0.0596 | 0.3056 | 132.5816 |
| 70 | 0.7482 | 1.0533 | 28.9198 | 0.3548 | 0.6552 | 50.7744 | 0.3008 | 0.5995 | 56.6326 | 0.1164 | 0.3992 | 93.8017 | 0.0532 | 0.3170 | 122.7067 |
| 75 | 0.6972 | 1.0210 | 27.7041 | 0.3278 | 0.6465 | 48.2300 | 0.2773 | 0.5942 | 53.6730 | 0.1059 | 0.4064 | 87.6714 | 0.0479 | 0.3296 | 113.5737 |
| 80 | 0.6531 | 0.9949 | 26.4589 | 0.3046 | 0.6411 | 45.6881 | 0.2571 | 0.5917 | 50.7359 | 0.0969 | 0.4150 | 81.8258 | 0.0435 | 0.3432 | 105.1004 |
| 85 | 0.6146 | 0.9739 | 25.1897 | 0.2844 | 0.6382 | 43.1585 | 0.2396 | 0.5915 | 47.8310 | 0.0893 | 0.4248 | 76.2513 | 0.0398 | 0.3576 | 97.2115 |
| 90 | 0.5809 | 0.9570 | 23.9013 | 0.2668 | 0.6374 | 40.6483 | 0.2244 | 0.5930 | 44.9651 | 0.0827 | 0.4354 | 70.9313 | 0.0366 | 0.3724 | 89.8394 |
| 95 | 0.5513 | 0.9435 | 22.5977 | 0.2515 | 0.6382 | 38.1631 | 0.2111 | 0.5960 | 42.1429 | 0.0771 | 0.4466 | 65.8479 | 0.0339 | 0.3876 | 82.9235 |
| 100 | 0.5252 | 0.9328 | 21.2826 | 0.2380 | 0.6403 | 35.7065 | 0.1995 | 0.6000 | 39.3671 | 0.0722 | 0.4582 | 60.9824 | 0.0316 | 0.4029 | 76.4102 |
| 105 | 0.5021 | 0.9245 | 19.9591 | 0.2261 | 0.6434 | 33.2808 | 0.1892 | 0.6048 | 36.6389 | 0.0680 | 0.4700 | 56.3164 | 0.0296 | 0.4181 | 70.2521 |
| 110 | 0.4817 | 0.9180 | 18.6296 | 0.2157 | 0.6472 | 30.8873 | 0.1803 | 0.6102 | 33.9582 | 0.0643 | 0.4818 | 51.8322 | 0.0279 | 0.4332 | 64.4071 |
| 115 | 0.4636 | 0.9131 | 17.2965 | 0.2065 | 0.6516 | 28.5262 | 0.1724 | 0.6160 | 31.3240 | 0.0611 | 0.4934 | 47.5125 | 0.0264 | 0.4478 | 58.8380 |
| 120 | 0.4477 | 0.9095 | 15.9613 | 0.1985 | 0.6563 | 26.1971 | 0.1655 | 0.6220 | 28.7345 | 0.0583 | 0.5048 | 43.3412 | 0.0252 | 0.4620 | 53.5116 |
| 125 | 0.4336 | 0.9069 | 14.6254 | 0.1914 | 0.6611 | 23.8989 | 0.1594 | 0.6280 | 26.1875 | 0.0559 | 0.5157 | 39.3029 | 0.0241 | 0.4756 | 48.3985 |
| 130 | 0.4212 | 0.9052 | 13.2899 | 0.1852 | 0.6660 | 21.6302 | 0.1541 | 0.6340 | 23.6802 | 0.0538 | 0.5262 | 35.3833 | 0.0231 | 0.4884 | 43.4720 |
| 135 | 0.4104 | 0.9041 | 11.9555 | 0.1798 | 0.6708 | 19.3889 | 0.1495 | 0.6397 | 21.2096 | 0.0520 | 0.5359 | 31.5687 | 0.0223 | 0.5004 | 38.7082 |
| 140 | 0.4011 | 0.9035 | 10.6227 | 0.1751 | 0.6754 | 17.1728 | 0.1455 | 0.6451 | 18.7723 | 0.0504 | 0.5449 | 27.8465 | 0.0216 | 0.5114 | 34.0856 |
| 145 | 0.3930 | 0.9032 | 9.2919 | 0.1711 | 0.6796 | 14.9797 | 0.1421 | 0.6501 | 16.3649 | 0.0491 | 0.5531 | 24.2045 | 0.0210 | 0.5213 | 29.5842 |
| 150 | 0.3862 | 0.9032 | 7.9631 | 0.1678 | 0.6835 | 12.8068 | 0.1392 | 0.6546 | 13.9838 | 0.0480 | 0.5603 | 20.6315 | 0.0205 | 0.5301 | 25.1858 |
| 155 | 0.3805 | 0.9034 | 6.6363 | 0.1650 | 0.6869 | 10.6515 | 0.1369 | 0.6585 | 11.6254 | 0.0471 | 0.5666 | 17.1165 | 0.0201 | 0.5377 | 20.8735 |
| 160 | 0.3760 | 0.9036 | 5.3114 | 0.1627 | 0.6897 | 8.5110 | 0.1350 | 0.6618 | 9.2859 | 0.0464 | 0.5718 | 13.6491 | 0.0197 | 0.5439 | 16.6315 |
| 165 | 0.3725 | 0.9038 | 3.9880 | 0.1610 | 0.6920 | 6.3824 | 0.1335 | 0.6644 | 6.9616 | 0.0458 | 0.5759 | 10.2195 | 0.0195 | 0.5489 | 12.4447 |
| 170 | 0.3700 | 0.9040 | 2.6660 | 0.1598 | 0.6937 | 4.2627 | 0.1325 | 0.6663 | 4.6487 | 0.0454 | 0.5789 | 6.8180 | 0.0193 | 0.5525 | 8.2988 |
| 175 | 0.3685 | 0.9041 | 1.3448 | 0.1591 | 0.6947 | 2.1491 | 0.1318 | 0.6674 | 2.3434 | 0.0452 | 0.5807 | 3.4351 | 0.0192 | 0.5546 | 4.1801 |
| 180 | 0.0000 | 0.0000 | 0.0241 | 0.0000 | 0.0000 | 0.0385 | 0.0000 | 0.0000 | 0.0420 | 0.0000 | 0.0000 | 0.0616 | 0.0000 | 0.0000 | 0.0749 |

TABLE 5. Estimation—Compton broadening nonrelativistically (component) in the angular region 0°–180° for 17.44, 22.1, 58.83, and 60 keV photons

| θ | H | | C | | | O | | | | | P | | | | |
|----------|--------|--------|--------|--------|---------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| | CB(K) | CB(K) | L1 | L1,L2 | N CB(K) | L1 | L2,L3 | CB(K) | L1 | L2,L3 | CB(K) | L1 | L2,L3 | M1 | M2,M3 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 5 | 0.0113 | 0.0507 | 0.0108 | 0.0067 | 0.0602 | 0.0128 | 0.0080 | 0.0695 | 0.0147 | 0.0080 | 0.1393 | 0.0412 | 0.0343 | 0.0301 | 0.0043 |
| 10 | 0.0225 | 0.1013 | 0.0217 | 0.0134 | 0.1202 | 0.0255 | 0.0159 | 0.1387 | 0.0294 | 0.0159 | 0.2783 | 0.0824 | 0.0685 | 0.0601 | 0.0085 |
| 15 | 0.0337 | 0.1516 | 0.0324 | 0.0201 | 0.1799 | 0.0382 | 0.0238 | 0.2077 | 0.0441 | 0.0238 | 0.4166 | 0.1234 | 0.1026 | 0.0900 | 0.0127 |
| 20 | 0.0448 | 0.2016 | 0.0431 | 0.0268 | 0.2393 | 0.0508 | 0.0317 | 0.2762 | 0.0586 | 0.0317 | 0.5540 | 0.1640 | 0.1364 | 0.1196 | 0.0169 |
| 25 | 0.0558 | 0.2512 | 0.0537 | 0.0333 | 0.2981 | 0.0632 | 0.0394 | 0.3441 | 0.0730 | 0.0394 | 0.6901 | 0.2044 | 0.1699 | 0.1490 | 0.0211 |
| 30 | 0.0666 | 0.3001 | 0.0642 | 0.0398 | 0.3562 | 0.0756 | 0.0471 | 0.4112 | 0.0873 | 0.0471 | 0.8247 | 0.2442 | 0.2031 | 0.1781 | 0.0252 |
| 35 | 0.0774 | 0.3484 | 0.0745 | 0.0462 | 0.4135 | 0.0877 | 0.0547 | 0.4774 | 0.1013 | 0.0547 | 0.9574 | 0.2835 | 0.2357 | 0.2068 | 0.0292 |
| 40 | 0.0879 | 0.3960 | 0.0847 | 0.0525 | 0.4699 | 0.0997 | 0.0622 | 0.5425 | 0.1151 | 0.0622 | 1.0879 | 0.3222 | 0.2679 | 0.2350 | 0.0332 |
| 45 | 0.0983 | 0.4426 | 0.0947 | 0.0587 | 0.5253 | 0.1114 | 0.0695 | 0.6063 | 0.1287 | 0.0695 | 1.2161 | 0.3601 | 0.2995 | 0.2626 | 0.0371 |
| 50 | 0.1084 | 0.4883 | 0.1045 | 0.0648 | 0.5795 | 0.1229 | 0.0767 | 0.6689 | 0.1419 | 0.0767 | 1.3415 | 0.3973 | 0.3303 | 0.2897 | 0.0410 |
| 55 | 0.1183 | 0.5329 | 0.1140 | 0.0707 | 0.6324 | 0.1341 | 0.0837 | 0.7300 | 0.1549 | 0.0837 | 1.4641 | 0.4335 | 0.3605 | 0.3162 | 0.0447 |
| 60 | 0.1280 | 0.5763 | 0.1233 | 0.0765 | 0.6839 | 0.1451 | 0.0905 | 0.7895 | 0.1675 | 0.0905 | 1.5834 | 0.4689 | 0.3899 | 0.3420 | 0.0484 |
| 65 | 0.1373 | 0.6185 | 0.1323 | 0.0821 | 0.7340 | 0.1557 | 0.0971 | 0.8473 | 0.1798 | 0.0971 | 1.6993 | 0.5032 | 0.4184 | 0.3670 | 0.0519 |
| 70 | 0.1464 | 0.6594 | 0.1411 | 0.0875 | 0.7825 | 0.1660 | 0.1035 | 0.9033 | 0.1917 | 0.1035 | 1.8117 | 0.5365 | 0.4461 | 0.3913 | 0.0553 |
| 75 | 0.1552 | 0.6988 | 0.1495 | 0.0927 | 0.8294 | 0.1759 | 0.1097 | 0.9574 | 0.2032 | 0.1097 | 1.9201 | 0.5686 | 0.4728 | 0.4147 | 0.0586 |
| 80 | 0.1636 | 0.7369 | 0.1577 | 0.0978 | 0.8745 | 0.1855 | 0.1157 | 1.0095 | 0.2142 | 0.1157 | 2.0246 | 0.5995 | 0.4985 | 0.4373 | 0.0618 |
| 85 | 0.1717 | 0.7734 | 0.1655 | 0.1026 | 0.9178 | 0.1947 | 0.1214 | 1.0595 | 0.2248 | 0.1214 | 2.1249 | 0.6292 | 0.5232 | 0.4589 | 0.0649 |
| 90 | 0.1795 | 0.8083 | 0.1729 | 0.1072 | 0.9593 | 0.2035 | 0.1269 | 1.1073 | 0.2350 | 0.1269 | 2.2209 | 0.6576 | 0.5469 | 0.4796 | 0.0678 |
| 95 | 0.1869 | 0.8416 | 0.1801 | 0.1117 | 0.9988 | 0.2119 | 0.1321 | 1.1529 | 0.2446 | 0.1321 | 2.3123 | 0.6847 | 0.5694 | 0.4994 | 0.0706 |
| 100 | 0.1939 | 0.8732 | 0.1868 | 0.1159 | 1.0363 | 0.2198 | 0.1371 | 1.1962 | 0.2538 | 0.1371 | 2.3992 | 0.7104 | 0.5908 | 0.5181 | 0.0733 |
| 105 | 0.2005 | 0.9031 | 0.1932 | 0.1198 | 1.0718 | 0.2274 | 0.1418 | 1.2372 | 0.2625 | 0.1418 | 2.4813 | 0.7348 | 0.6110 | 0.5359 | 0.0758 |
| 110 | 0.2067 | 0.9312 | 0.1992 | 0.1236 | 1.1051 | 0.2344 | 0.1462 | 1.2757 | 0.2707 | 0.1462 | 2.5585 | 0.7576 | 0.6300 | 0.5526 | 0.0781 |
| 115 | 0.2126 | 0.9575 | 0.2049 | 0.1270 | 1.1363 | 0.2411 | 0.1503 | 1.3117 | 0.2783 | 0.1503 | 2.6308 | 0.7790 | 0.6478 | 0.5682 | 0.0804 |
| 120 | 0.2180 | 0.9820 | 0.2101 | 0.1303 | 1.1654 | 0.2472 | 0.1542 | 1.3453 | 0.2855 | 0.1542 | 2.6981 | 0.7990 | 0.6644 | 0.5827 | 0.0824 |
| 125 | 0.2230 | 1.0046 | 0.2149 | 0.1333 | 1.1922 | 0.2529 | 0.1577 | 1.3762 | 0.2920 | 0.1577 | 2.7602 | 0.8174 | 0.6797 | 0.5961 | 0.0843 |
| 130 | 0.2276 | 1.0253 | 0.2194 | 0.1360 | 1.2168 | 0.2581 | 0.1610 | 1.4046 | 0.2981 | 0.1610 | 2.8172 | 0.8342 | 0.6937 | 0.6084 | 0.0860 |
| 135 | 0.2318 | 1.0441 | 0.2234 | 0.1385 | 1.2392 | 0.2629 | 0.1639 | 1.4304 | 0.3035 | 0.1639 | 2.8689 | 0.8495 | 0.7064 | 0.6196 | 0.0876 |
| 140 | 0.2356 | 1.0610 | 0.2270 | 0.1408 | 1.2592 | 0.2671 | 0.1666 | 1.4535 | 0.3084 | 0.1666 | 2.9153 | 0.8633 | 0.7179 | 0.6296 | 0.0890 |
| 145 | 0.2389 | 1.0760 | 0.2302 | 0.1428 | 1.2769 | 0.2709 | 0.1689 | 1.4740 | 0.3128 | 0.1689 | 2.9563 | 0.8754 | 0.7280 | 0.6385 | 0.0903 |
| 150 | 0.2418 | 1.0889 | 0.2330 | 0.1445 | 1.2923 | 0.2741 | 0.1710 | 1.4918 | 0.3166 | 0.1710 | 2.9920 | 0.8860 | 0.7367 | 0.6462 | 0.0914 |
| 155 | 0.2442 | 1.0999 | 0.2353 | 0.1459 | 1.3054 | 0.2769 | 0.1727 | 1.5069 | 0.3198 | 0.1727 | 3.0222 | 0.8949 | 0.7442 | 0.6527 | 0.0923 |
| 160 | 0.2462 | 1.1090 | 0.2373 | 0.1471 | 1.3161 | 0.2792 | 0.1741 | 1.5192 | 0.3224 | 0.1741 | 3.0470 | 0.9023 | 0.7503 | 0.6581 | 0.0931 |
| 165 | 0.2478 | 1.1160 | 0.2388 | 0.1481 | 1.3245 | 0.2810 | 0.1752 | 1.5289 | 0.3244 | 0.1752 | 3.0663 | 0.9080 | 0.7551 | 0.6622 | 0.0937 |
| 170 | 0.2489 | 1.1210 | 0.2398 | 0.1487 | 1.3304 | 0.2822 | 0.1760 | 1.5358 | 0.3259 | 0.1760 | 3.0802 | 0.9121 | 0.7585 | 0.6652 | 0.0941 |
| 175 | 0.2496 | 1.1241 | 0.2405 | 0.1492 | 1.3340 | 0.2830 | 0.1765 | 1.5399 | 0.3268 | 0.1765 | 3.0885 | 0.9146 | 0.7605 | 0.6670 | 0.0943 |
| 180 | 0.2498 | 1.1251 | 0.2407 | 0.1493 | 1.3353 | 0.2833 | 0.1766 | 1.5414 | 0.3271 | 0.1766 | 3.0914 | 0.9154 | 0.7612 | 0.6676 | 0.0944 |

| θ | S | | | | | K | | | | | Ca | | | | |
|----------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| | CB(K) | L1 | L2,L3 | M1 | M2,M3 | CB(K) | L1 | L2,L3 | M1 | M2,M3 | CB(K) | L1 | L2,L3 | M1 | M2,M3 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 5 | 0.1496 | 0.0453 | 0.0386 | 0.0113 | 0.0060 | 0.1807 | 0.0584 | 0.0518 | 0.0175 | 0.0128 | 0.1911 | 0.0630 | 0.0563 | 0.0631 | 0.0476 |
| 10 | 0.2988 | 0.0905 | 0.0772 | 0.0225 | 0.0120 | 0.3609 | 0.1167 | 0.1034 | 0.0350 | 0.0255 | 0.3818 | 0.1258 | 0.1124 | 0.1261 | 0.0950 |
| 15 | 0.4473 | 0.1356 | 0.1156 | 0.0337 | 0.0180 | 0.5404 | 0.1747 | 0.1548 | 0.0525 | 0.0382 | 0.5717 | 0.1883 | 0.1683 | 0.1887 | 0.1423 |
| 20 | 0.5949 | 0.1803 | 0.1537 | 0.0448 | 0.0239 | 0.7186 | 0.2323 | 0.2058 | 0.0698 | 0.0508 | 0.7602 | 0.2504 | 0.2238 | 0.2510 | 0.1892 |
| 25 | 0.7410 | 0.2246 | 0.1914 | 0.0558 | 0.0298 | 0.8951 | 0.2894 | 0.2564 | 0.0869 | 0.0632 | 0.9470 | 0.3119 | 0.2788 | 0.3126 | 0.2357 |
| 30 | 0.8855 | 0.2683 | 0.2288 | 0.0666 | 0.0356 | 1.0697 | 0.3458 | 0.3064 | 0.1039 | 0.0756 | 1.1316 | 0.3727 | 0.3332 | 0.3736 | 0.2816 |
| 35 | 1.0280 | 0.3115 | 0.2656 | 0.0774 | 0.0414 | 1.2418 | 0.4015 | 0.3557 | 0.1206 | 0.0877 | 1.3137 | 0.4327 | 0.3868 | 0.4337 | 0.3269 |
| 40 | 1.1682 | 0.3540 | 0.3018 | 0.0879 | 0.0470 | 1.4111 | 0.4562 | 0.4042 | 0.1370 | 0.0997 | 1.4929 | 0.4917 | 0.4396 | 0.4929 | 0.3715 |
| 45 | 1.3058 | 0.3957 | 0.3374 | 0.0983 | 0.0525 | 1.5773 | 0.5099 | 0.4519 | 0.1531 | 0.1114 | 1.6687 | 0.5497 | 0.4913 | 0.5509 | 0.4153 |
| 50 | 1.4405 | 0.4365 | 0.3722 | 0.1084 | 0.0579 | 1.7401 | 0.5626 | 0.4985 | 0.1689 | 0.1229 | 1.8409 | 0.6064 | 0.5420 | 0.6077 | 0.4581 |
| 55 | 1.5721 | 0.4764 | 0.4062 | 0.1183 | 0.0632 | 1.8990 | 0.6139 | 0.5440 | 0.1844 | 0.1341 | 2.0090 | 0.6617 | 0.5915 | 0.6632 | 0.4999 |
| 60 | 1.7002 | 0.5152 | 0.4393 | 0.1280 | 0.0684 | 2.0538 | 0.6640 | 0.5883 | 0.1994 | 0.1451 | 2.1727 | 0.7157 | 0.6398 | 0.7173 | 0.5407 |
| 65 | 1.8247 | 0.5529 | 0.4714 | 0.1373 | 0.0734 | 2.2041 | 0.7126 | 0.6314 | 0.2140 | 0.1557 | 2.3318 | 0.7681 | 0.6866 | 0.7698 | 0.5803 |
| 70 | 1.9453 | 0.5895 | 0.5026 | 0.1464 | 0.0783 | 2.3498 | 0.7597 | 0.6731 | 0.2281 | 0.1660 | 2.4859 | 0.8188 | 0.7320 | 0.8207 | 0.6186 |
| 75 | 2.0618 | 0.6248 | 0.5327 | 0.1552 | 0.0829 | 2.4905 | 0.8052 | 0.7135 | 0.2418 | 0.1759 | 2.6348 | 0.8679 | 0.7758 | 0.8699 | 0.6557 |
| 80 | 2.1740 | 0.6588 | 0.5617 | 0.1636 | 0.0875 | 2.6261 | 0.8490 | 0.7523 | 0.2550 | 0.1855 | 2.7782 | 0.9151 | 0.8180 | 0.9172 | 0.6914 |
| 85 | 2.2817 | 0.6914 | 0.5895 | 0.1717 | 0.0918 | 2.7561 | 0.8910 | 0.7895 | 0.2676 | 0.1947 | 2.9158 | 0.9604 | 0.8585 | 0.9626 | 0.7256 |
| 90 | 2.3847 | 0.7226 | 0.6161 | 0.1795 | 0.0959 | 2.8806 | 0.9313 | 0.8252 | 0.2797 | 0.2035 | 3.0475 | 1.0038 | 0.8973 | 1.0061 | 0.7584 |

TABLE 5. Estimation—Compton broadening nonrelativistically (component) in the angular region 0°–180° for 17.44, 22.1, 58.83, and 60 keV photons—Continued

| θ | S | | | | | K | | | | | Ca | | | | |
|----------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| | CB(K) | L1 | L2,L3 | M1 | M2,M3 | CB(K) | L1 | L2,L3 | M1 | M2,M3 | CB(K) | L1 | L2,L3 | M1 | M2,M3 |
| 95 | 2.4829 | 0.7524 | 0.6415 | 0.1869 | 0.0999 | 2.9992 | 0.9696 | 0.8592 | 0.2912 | 0.2119 | 3.1730 | 1.0451 | 0.9343 | 1.0475 | 0.7896 |
| 100 | 2.5762 | 0.7807 | 0.6656 | 0.1939 | 0.1036 | 3.1119 | 1.0061 | 0.8915 | 0.3021 | 0.2198 | 3.2922 | 1.0844 | 0.9694 | 1.0869 | 0.8193 |
| 105 | 2.6643 | 0.8074 | 0.6883 | 0.2005 | 0.1072 | 3.2184 | 1.0405 | 0.9220 | 0.3125 | 0.2274 | 3.4048 | 1.1215 | 1.0025 | 1.1241 | 0.8473 |
| 110 | 2.7473 | 0.8325 | 0.7098 | 0.2067 | 0.1105 | 3.3186 | 1.0729 | 0.9507 | 0.3222 | 0.2344 | 3.5108 | 1.1564 | 1.0337 | 1.1591 | 0.8737 |
| 115 | 2.8249 | 0.8560 | 0.7298 | 0.2126 | 0.1136 | 3.4124 | 1.1032 | 0.9775 | 0.3313 | 0.2411 | 3.6100 | 1.1891 | 1.0630 | 1.1918 | 0.8984 |
| 120 | 2.8971 | 0.8779 | 0.7485 | 0.2180 | 0.1165 | 3.4996 | 1.1314 | 1.0025 | 0.3398 | 0.2472 | 3.7023 | 1.2195 | 1.0901 | 1.2223 | 0.9213 |
| 125 | 2.9638 | 0.8981 | 0.7657 | 0.2230 | 0.1192 | 3.5802 | 1.1575 | 1.0256 | 0.3476 | 0.2529 | 3.7876 | 1.2476 | 1.1152 | 1.2504 | 0.9425 |
| 130 | 3.0250 | 0.9167 | 0.7815 | 0.2276 | 0.1217 | 3.6540 | 1.1813 | 1.0468 | 0.3548 | 0.2581 | 3.8657 | 1.2733 | 1.1382 | 1.2762 | 0.9620 |
| 135 | 3.0805 | 0.9335 | 0.7959 | 0.2318 | 0.1239 | 3.7211 | 1.2030 | 1.0660 | 0.3613 | 0.2629 | 3.9367 | 1.2967 | 1.1591 | 1.2996 | 0.9796 |
| 140 | 3.1303 | 0.9486 | 0.8087 | 0.2356 | 0.1259 | 3.7813 | 1.2225 | 1.0832 | 0.3671 | 0.2671 | 4.0003 | 1.3177 | 1.1779 | 1.3207 | 0.9955 |
| 145 | 3.1744 | 0.9619 | 0.8201 | 0.2389 | 0.1277 | 3.8345 | 1.2397 | 1.0985 | 0.3723 | 0.2709 | 4.0566 | 1.3362 | 1.1945 | 1.3393 | 1.0095 |
| 150 | 3.2127 | 0.9736 | 0.8300 | 0.2418 | 0.1292 | 3.8808 | 1.2546 | 1.1117 | 0.3768 | 0.2741 | 4.1056 | 1.3523 | 1.2089 | 1.3554 | 1.0217 |
| 155 | 3.2452 | 0.9834 | 0.8384 | 0.2442 | 0.1305 | 3.9200 | 1.2673 | 1.1229 | 0.3806 | 0.2769 | 4.1471 | 1.3660 | 1.2211 | 1.3691 | 1.0320 |
| 160 | 3.2718 | 0.9915 | 0.8453 | 0.2462 | 0.1316 | 3.9522 | 1.2777 | 1.1322 | 0.3837 | 0.2792 | 4.1811 | 1.3772 | 1.2311 | 1.3803 | 1.0405 |
| 165 | 3.2926 | 0.9977 | 0.8506 | 0.2478 | 0.1324 | 3.9772 | 1.2858 | 1.1393 | 0.3861 | 0.2810 | 4.2076 | 1.3859 | 1.2389 | 1.3891 | 1.0471 |
| 170 | 3.3074 | 1.0023 | 0.8545 | 0.2489 | 0.1330 | 3.9952 | 1.2916 | 1.1445 | 0.3879 | 0.2822 | 4.2266 | 1.3922 | 1.2445 | 1.3954 | 1.0518 |
| 175 | 3.3164 | 1.0050 | 0.8568 | 0.2496 | 0.1334 | 4.0060 | 1.2951 | 1.1476 | 0.3889 | 0.2830 | 4.2381 | 1.3960 | 1.2479 | 1.3992 | 1.0547 |
| 180 | 3.3195 | 1.0059 | 0.8576 | 0.2498 | 0.1335 | 4.0097 | 1.2963 | 1.1487 | 0.3893 | 0.2833 | 4.2420 | 1.3973 | 1.2490 | 1.4005 | 1.0556 |

Ag K α : 22.1 keV

| θ | H | | C | | N | | O | | P | | S | | Ca | | |
|----------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| | CB(K) | CB(K) | L1 | L1,L2 | CB(K) | L1 | L2,L3 | CB(K) | L1 | L2,L3 | CB(K) | L1 | L2,L3 | M1 | M2,M3 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 5 | 0.0143 | 0.0642 | 0.0137 | 0.0085 | 0.0762 | 0.0162 | 0.0101 | 0.0880 | 0.0187 | 0.0114 | 0.1765 | 0.0523 | 0.0435 | 0.0381 | 0.0170 |
| 10 | 0.0285 | 0.1283 | 0.0275 | 0.0170 | 0.1523 | 0.0323 | 0.0201 | 0.1758 | 0.0373 | 0.0228 | 0.3526 | 0.1044 | 0.0868 | 0.0761 | 0.0341 |
| 15 | 0.0427 | 0.1921 | 0.0411 | 0.0255 | 0.2280 | 0.0484 | 0.0302 | 0.2632 | 0.0558 | 0.0342 | 0.5278 | 0.1563 | 0.1300 | 0.1140 | 0.0510 |
| 20 | 0.0567 | 0.2554 | 0.0546 | 0.0339 | 0.3031 | 0.0643 | 0.0401 | 0.3499 | 0.0743 | 0.0455 | 0.7018 | 0.2078 | 0.1728 | 0.1516 | 0.0678 |
| 25 | 0.0706 | 0.3181 | 0.0681 | 0.0422 | 0.3776 | 0.0801 | 0.0499 | 0.4358 | 0.0925 | 0.0566 | 0.8741 | 0.2589 | 0.2152 | 0.1888 | 0.0844 |
| 30 | 0.0844 | 0.3801 | 0.0813 | 0.0504 | 0.4511 | 0.0957 | 0.0597 | 0.5207 | 0.1105 | 0.0677 | 1.0444 | 0.3093 | 0.2572 | 0.2256 | 0.1009 |
| 35 | 0.0980 | 0.4412 | 0.0944 | 0.0585 | 0.5236 | 0.1111 | 0.0693 | 0.6044 | 0.1283 | 0.0785 | 1.2122 | 0.3590 | 0.2985 | 0.2618 | 0.1171 |
| 40 | 0.1113 | 0.5012 | 0.1072 | 0.0665 | 0.5949 | 0.1262 | 0.0787 | 0.6867 | 0.1457 | 0.0892 | 1.3772 | 0.4078 | 0.3391 | 0.2974 | 0.1330 |
| 45 | 0.1244 | 0.5601 | 0.1198 | 0.0743 | 0.6647 | 0.1410 | 0.0879 | 0.7673 | 0.1628 | 0.0997 | 1.5390 | 0.4557 | 0.3790 | 0.3324 | 0.1486 |
| 50 | 0.1372 | 0.6177 | 0.1322 | 0.0820 | 0.7331 | 0.1555 | 0.0970 | 0.8463 | 0.1796 | 0.1100 | 1.6973 | 0.5026 | 0.4179 | 0.3666 | 0.1639 |
| 55 | 0.1496 | 0.6739 | 0.1442 | 0.0894 | 0.7998 | 0.1697 | 0.1058 | 0.9233 | 0.1959 | 0.1200 | 1.8517 | 0.5483 | 0.4560 | 0.3999 | 0.1788 |
| 60 | 0.1618 | 0.7286 | 0.1559 | 0.0967 | 0.8647 | 0.1834 | 0.1144 | 0.9982 | 0.2118 | 0.1297 | 2.0020 | 0.5928 | 0.4930 | 0.4324 | 0.1934 |
| 65 | 0.1736 | 0.7817 | 0.1673 | 0.1037 | 0.9277 | 0.1968 | 0.1227 | 1.0709 | 0.2272 | 0.1392 | 2.1479 | 0.6360 | 0.5289 | 0.4639 | 0.2074 |
| 70 | 0.1850 | 0.8331 | 0.1782 | 0.1105 | 0.9887 | 0.2097 | 0.1308 | 1.1413 | 0.2422 | 0.1483 | 2.2890 | 0.6778 | 0.5637 | 0.4944 | 0.2211 |
| 75 | 0.1960 | 0.8827 | 0.1888 | 0.1171 | 1.0475 | 0.2222 | 0.1386 | 1.2092 | 0.2566 | 0.1571 | 2.4252 | 0.7182 | 0.5972 | 0.5238 | 0.2342 |
| 80 | 0.2066 | 0.9304 | 0.1991 | 0.1234 | 1.1041 | 0.2342 | 0.1461 | 1.2745 | 0.2705 | 0.1656 | 2.5563 | 0.7570 | 0.6295 | 0.5521 | 0.2469 |
| 85 | 0.2167 | 0.9761 | 0.2088 | 0.1295 | 1.1584 | 0.2457 | 0.1532 | 1.3372 | 0.2838 | 0.1738 | 2.6819 | 0.7942 | 0.6604 | 0.5792 | 0.2590 |
| 90 | 0.2264 | 1.0198 | 0.2182 | 0.1353 | 1.2103 | 0.2567 | 0.1601 | 1.3971 | 0.2965 | 0.1815 | 2.8020 | 0.8297 | 0.6900 | 0.6051 | 0.2706 |
| 95 | 0.2357 | 1.0614 | 0.2271 | 0.1408 | 1.2597 | 0.2672 | 0.1666 | 1.4541 | 0.3086 | 0.1889 | 2.9163 | 0.8636 | 0.7181 | 0.6298 | 0.2817 |
| 100 | 0.2444 | 1.1009 | 0.2355 | 0.1461 | 1.3065 | 0.2771 | 0.1728 | 1.5081 | 0.3200 | 0.1960 | 3.0247 | 0.8957 | 0.7448 | 0.6532 | 0.2921 |
| 105 | 0.2527 | 1.1381 | 0.2435 | 0.1510 | 1.3507 | 0.2865 | 0.1787 | 1.5592 | 0.3309 | 0.2026 | 3.1271 | 0.9260 | 0.7700 | 0.6754 | 0.3020 |
| 110 | 0.2605 | 1.1732 | 0.2510 | 0.1557 | 1.3923 | 0.2953 | 0.1842 | 1.6072 | 0.3410 | 0.2088 | 3.2234 | 0.9545 | 0.7937 | 0.6961 | 0.3113 |
| 115 | 0.2677 | 1.2059 | 0.2580 | 0.1600 | 1.4312 | 0.3036 | 0.1893 | 1.6520 | 0.3506 | 0.2147 | 3.3134 | 0.9812 | 0.8159 | 0.7156 | 0.3200 |
| 120 | 0.2745 | 1.2364 | 0.2645 | 0.1640 | 1.4673 | 0.3113 | 0.1941 | 1.6937 | 0.3594 | 0.2201 | 3.3970 | 1.0059 | 0.8365 | 0.7336 | 0.3281 |
| 125 | 0.2807 | 1.2644 | 0.2705 | 0.1678 | 1.5006 | 0.3183 | 0.1985 | 1.7322 | 0.3676 | 0.2251 | 3.4742 | 1.0288 | 0.8555 | 0.7503 | 0.3355 |
| 130 | 0.2865 | 1.2902 | 0.2760 | 0.1712 | 1.5312 | 0.3248 | 0.2026 | 1.7675 | 0.3751 | 0.2297 | 3.5449 | 1.0497 | 0.8729 | 0.7656 | 0.3424 |
| 135 | 0.2916 | 1.3135 | 0.2810 | 0.1743 | 1.5588 | 0.3307 | 0.2062 | 1.7994 | 0.3818 | 0.2338 | 3.6090 | 1.0687 | 0.8887 | 0.7794 | 0.3486 |
| 140 | 0.2963 | 1.3344 | 0.2855 | 0.1771 | 1.5837 | 0.3360 | 0.2095 | 1.8281 | 0.3879 | 0.2376 | 3.6665 | 1.0857 | 0.9028 | 0.7918 | 0.3541 |
| 145 | 0.3004 | 1.3529 | 0.2895 | 0.1795 | 1.6056 | 0.3406 | 0.2124 | 1.8535 | 0.3933 | 0.2408 | 3.7173 | 1.1008 | 0.9154 | 0.8028 | 0.3590 |
| 150 | 0.3040 | 1.3690 | 0.2929 | 0.1816 | 1.6247 | 0.3447 | 0.2149 | 1.8755 | 0.3980 | 0.2437 | 3.7615 | 1.1138 | 0.9262 | 0.8124 | 0.3633 |
| 155 | 0.3070 | 1.3826 | 0.2958 | 0.1835 | 1.6409 | 0.3481 | 0.2171 | 1.8941 | 0.4019 | 0.2461 | 3.7989 | 1.1249 | 0.9354 | 0.8204 | 0.3669 |
| 160 | 0.3095 | 1.3938 | 0.2982 | 0.1849 | 1.6541 | 0.3509 | 0.2188 | 1.9094 | 0.4052 | 0.2481 | 3.8296 | 1.1340 | 0.9430 | 0.8271 | 0.3699 |
| 165 | 0.3114 | 1.4025 | 0.3001 | 0.1861 | 1.6644 | 0.3531 | 0.2202 | 1.9213 | 0.4077 | 0.2497 | 3.8534 | 1.1411 | 0.9489 | 0.8322 | 0.3722 |
| 170 | 0.3128 | 1.4087 | 0.3014 | 0.1869 | 1.6718 | 0.3546 | 0.2212 | 1.9299 | 0.4095 | 0.2508 | 3.8706 | 1.1461 | 0.9531 | 0.8359 | 0.3738 |
| 175 | 0.3136 | 1.4125 | 0.3022 | 0.1874 | 1.6763 | 0.3556 | 0.2218 | 1.9350 | 0.4106 | 0.2514 | 3.8809 | 1.1492 | 0.9556 | 0.8381 | 0.3748 |
| 180 | 0.3139 | 1.4137 | 0.3025 | 0.1876 | 1.6778 | 0.3559 | 0.2220 | 1.9368 | 0.4110 | 0.2517 | 3.8844 | 1.1502 | 0.9565 | 0.8389 | 0.3752 |

TABLE 5. Estimation—Compton broadening nonrelativistically (component) in the angular region 0°–180° for 17.44, 22.1, 58.83, and 60 keV photons—Continued

| θ | S | | | | | K | | | | | Ca | | | | |
|----------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| | CB(K) | L1 | L2,L3 | M1 | M2,M3 | CB(K) | L1 | L2,L3 | M1 | M2,M3 | CB(K) | L1 | L2,L3 | M1 | M2,M3 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 5 | 0.1895 | 0.0574 | 0.0490 | 0.0143 | 0.0076 | 0.2289 | 0.0740 | 0.0656 | 0.0222 | 0.0162 | 0.2422 | 0.0798 | 0.0713 | 0.0253 | 0.0191 |
| 10 | 0.3786 | 0.1147 | 0.0978 | 0.0285 | 0.0152 | 0.4573 | 0.1479 | 0.1310 | 0.0444 | 0.0323 | 0.4838 | 0.1594 | 0.1425 | 0.0505 | 0.0381 |
| 15 | 0.5668 | 0.1718 | 0.1464 | 0.0427 | 0.0228 | 0.6846 | 0.2213 | 0.1961 | 0.0665 | 0.0484 | 0.7243 | 0.2386 | 0.2133 | 0.0756 | 0.0570 |
| 20 | 0.7536 | 0.2284 | 0.1947 | 0.0567 | 0.0303 | 0.9103 | 0.2943 | 0.2608 | 0.0884 | 0.0643 | 0.9630 | 0.3172 | 0.2836 | 0.1005 | 0.0758 |
| 25 | 0.9386 | 0.2844 | 0.2425 | 0.0706 | 0.0378 | 1.1338 | 0.3666 | 0.3248 | 0.1101 | 0.0801 | 1.1995 | 0.3951 | 0.3532 | 0.1252 | 0.0944 |
| 30 | 1.1214 | 0.3398 | 0.2897 | 0.0844 | 0.0451 | 1.3547 | 0.4380 | 0.3881 | 0.1315 | 0.0957 | 1.4331 | 0.4721 | 0.4220 | 0.1496 | 0.1128 |
| 35 | 1.3016 | 0.3944 | 0.3363 | 0.0980 | 0.0524 | 1.5723 | 0.5083 | 0.4504 | 0.1527 | 0.1111 | 1.6634 | 0.5479 | 0.4898 | 0.1737 | 0.1309 |
| 40 | 1.4788 | 0.4481 | 0.3821 | 0.1113 | 0.0595 | 1.7863 | 0.5775 | 0.5117 | 0.1734 | 0.1262 | 1.8898 | 0.6225 | 0.5564 | 0.1973 | 0.1487 |
| 45 | 1.6525 | 0.5008 | 0.4269 | 0.1244 | 0.0665 | 1.9962 | 0.6454 | 0.5718 | 0.1938 | 0.1410 | 2.1118 | 0.6956 | 0.6218 | 0.2205 | 0.1662 |
| 50 | 1.8225 | 0.5523 | 0.4709 | 0.1372 | 0.0733 | 2.2015 | 0.7117 | 0.6307 | 0.2137 | 0.1555 | 2.3290 | 0.7671 | 0.6858 | 0.2431 | 0.1833 |
| 55 | 1.9883 | 0.6025 | 0.5137 | 0.1496 | 0.0800 | 2.4018 | 0.7765 | 0.6880 | 0.2332 | 0.1697 | 2.5409 | 0.8370 | 0.7482 | 0.2653 | 0.2000 |
| 60 | 2.1497 | 0.6514 | 0.5554 | 0.1618 | 0.0865 | 2.5967 | 0.8395 | 0.7439 | 0.2521 | 0.1834 | 2.7472 | 0.9049 | 0.8089 | 0.2868 | 0.2162 |
| 65 | 2.3063 | 0.6989 | 0.5959 | 0.1736 | 0.0928 | 2.7859 | 0.9007 | 0.7981 | 0.2705 | 0.1968 | 2.9473 | 0.9708 | 0.8678 | 0.3077 | 0.2319 |
| 70 | 2.4579 | 0.7448 | 0.6350 | 0.1850 | 0.0989 | 2.9690 | 0.9599 | 0.8505 | 0.2883 | 0.2097 | 3.1410 | 1.0346 | 0.9249 | 0.3279 | 0.2472 |
| 75 | 2.6041 | 0.7891 | 0.6728 | 0.1960 | 0.1048 | 3.1457 | 1.0170 | 0.9011 | 0.3054 | 0.2222 | 3.3279 | 1.0962 | 0.9799 | 0.3474 | 0.2619 |
| 80 | 2.7448 | 0.8318 | 0.7091 | 0.2066 | 0.1104 | 3.3156 | 1.0719 | 0.9498 | 0.3219 | 0.2342 | 3.5077 | 1.1554 | 1.0328 | 0.3662 | 0.2760 |
| 85 | 2.8798 | 0.8727 | 0.7440 | 0.2167 | 0.1158 | 3.4786 | 1.1246 | 0.9965 | 0.3377 | 0.2457 | 3.6801 | 1.2122 | 1.0836 | 0.3842 | 0.2896 |
| 90 | 3.0087 | 0.9117 | 0.7773 | 0.2264 | 0.1210 | 3.6343 | 1.1750 | 1.0411 | 0.3529 | 0.2567 | 3.8449 | 1.2665 | 1.1321 | 0.4014 | 0.3026 |
| 95 | 3.1314 | 0.9489 | 0.8090 | 0.2357 | 0.1260 | 3.7826 | 1.2229 | 1.0836 | 0.3672 | 0.2672 | 4.0018 | 1.3181 | 1.1783 | 0.4178 | 0.3149 |
| 100 | 3.2479 | 0.9842 | 0.8391 | 0.2444 | 0.1306 | 3.9233 | 1.2684 | 1.1239 | 0.3809 | 0.2771 | 4.1505 | 1.3671 | 1.2221 | 0.4333 | 0.3266 |
| 105 | 3.3578 | 1.0175 | 0.8675 | 0.2527 | 0.1351 | 4.0561 | 1.3113 | 1.1619 | 0.3938 | 0.2865 | 4.2911 | 1.4134 | 1.2635 | 0.4480 | 0.3377 |
| 110 | 3.4612 | 1.0488 | 0.8942 | 0.2605 | 0.1392 | 4.1809 | 1.3517 | 1.1977 | 0.4059 | 0.2953 | 4.4231 | 1.4569 | 1.3024 | 0.4618 | 0.3481 |
| 115 | 3.5578 | 1.0781 | 0.9192 | 0.2677 | 0.1431 | 4.2977 | 1.3894 | 1.2311 | 0.4173 | 0.3036 | 4.5466 | 1.4976 | 1.3387 | 0.4747 | 0.3578 |
| 120 | 3.6476 | 1.1053 | 0.9424 | 0.2745 | 0.1467 | 4.4061 | 1.4245 | 1.2622 | 0.4278 | 0.3113 | 4.6614 | 1.5354 | 1.3725 | 0.4866 | 0.3668 |
| 125 | 3.7305 | 1.1305 | 0.9638 | 0.2807 | 0.1501 | 4.5062 | 1.4568 | 1.2909 | 0.4375 | 0.3183 | 4.7673 | 1.5703 | 1.4037 | 0.4977 | 0.3752 |
| 130 | 3.8064 | 1.1535 | 0.9834 | 0.2865 | 0.1531 | 4.5979 | 1.4865 | 1.3171 | 0.4464 | 0.3248 | 4.8643 | 1.6022 | 1.4323 | 0.5078 | 0.3828 |
| 135 | 3.8752 | 1.1743 | 1.0012 | 0.2916 | 0.1559 | 4.6811 | 1.5134 | 1.3410 | 0.4545 | 0.3307 | 4.9523 | 1.6312 | 1.4582 | 0.5170 | 0.3897 |
| 140 | 3.9370 | 1.1930 | 1.0171 | 0.2963 | 0.1584 | 4.7557 | 1.5375 | 1.3623 | 0.4617 | 0.3360 | 5.0312 | 1.6572 | 1.4814 | 0.5252 | 0.3959 |
| 145 | 3.9916 | 1.2096 | 1.0312 | 0.3004 | 0.1606 | 4.8216 | 1.5588 | 1.3812 | 0.4681 | 0.3406 | 5.1009 | 1.6802 | 1.5019 | 0.5325 | 0.4014 |
| 150 | 4.0390 | 1.2239 | 1.0435 | 0.3040 | 0.1625 | 4.8789 | 1.5773 | 1.3976 | 0.4737 | 0.3447 | 5.1615 | 1.7001 | 1.5198 | 0.5389 | 0.4062 |
| 155 | 4.0791 | 1.2361 | 1.0539 | 0.3070 | 0.1641 | 4.9274 | 1.5930 | 1.4115 | 0.4784 | 0.3481 | 5.2128 | 1.7170 | 1.5349 | 0.5442 | 0.4102 |
| 160 | 4.1121 | 1.2461 | 1.0624 | 0.3095 | 0.1654 | 4.9672 | 1.6059 | 1.4229 | 0.4823 | 0.3509 | 5.2549 | 1.7309 | 1.5473 | 0.5486 | 0.4135 |
| 165 | 4.1377 | 1.2539 | 1.0690 | 0.3114 | 0.1664 | 4.9982 | 1.6159 | 1.4318 | 0.4853 | 0.3531 | 5.2877 | 1.7417 | 1.5569 | 0.5520 | 0.4161 |
| 170 | 4.1561 | 1.2594 | 1.0738 | 0.3128 | 0.1672 | 5.0204 | 1.6231 | 1.4382 | 0.4874 | 0.3546 | 5.3112 | 1.7494 | 1.5639 | 0.5545 | 0.4180 |
| 175 | 4.1672 | 1.2628 | 1.0766 | 0.3136 | 0.1676 | 5.0337 | 1.6274 | 1.4420 | 0.4887 | 0.3556 | 5.3253 | 1.7541 | 1.5680 | 0.5560 | 0.4191 |
| 180 | 4.1710 | 1.2639 | 1.0776 | 0.3139 | 0.1678 | 5.0383 | 1.6289 | 1.4433 | 0.4892 | 0.3559 | 5.3302 | 1.7557 | 1.5694 | 0.5565 | 0.4195 |

W K α : 58.83 keV

| θ | H | | C | | N | | O | | P | | M1 | M2,M3 | | | |
|----------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| | CB(K) | CB(K) | L1 | L1,L2 | CB(K) | L1 | L2,L3 | CB(K) | L1 | L2,L3 | | | | | |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | | | |
| 5 | 0.0380 | 0.1710 | 0.0366 | 0.0227 | 0.2029 | 0.0430 | 0.0268 | 0.2342 | 0.0497 | 0.0304 | 0.4698 | 0.1391 | 0.1157 | 0.0321 | 0.0454 |
| 10 | 0.0758 | 0.3414 | 0.0730 | 0.0453 | 0.4052 | 0.0860 | 0.0536 | 0.4677 | 0.0993 | 0.0608 | 0.9381 | 0.2778 | 0.2310 | 0.0641 | 0.0906 |
| 15 | 0.1134 | 0.5108 | 0.1093 | 0.0678 | 0.6062 | 0.1286 | 0.0802 | 0.6997 | 0.1485 | 0.0909 | 1.4034 | 0.4156 | 0.3456 | 0.0958 | 0.1355 |
| 20 | 0.1506 | 0.6785 | 0.1452 | 0.0900 | 0.8052 | 0.1708 | 0.1065 | 0.9295 | 0.1972 | 0.1208 | 1.8643 | 0.5520 | 0.4591 | 0.1273 | 0.1801 |
| 25 | 0.1874 | 0.8441 | 0.1806 | 0.1120 | 1.0018 | 0.2125 | 0.1325 | 1.1564 | 0.2454 | 0.1503 | 2.3193 | 0.6868 | 0.5711 | 0.1584 | 0.2240 |
| 30 | 0.2236 | 1.0071 | 0.2155 | 0.1336 | 1.1952 | 0.2535 | 0.1581 | 1.3797 | 0.2928 | 0.1793 | 2.7671 | 0.8194 | 0.6814 | 0.1890 | 0.2673 |
| 35 | 0.2591 | 1.1670 | 0.2497 | 0.1548 | 1.3850 | 0.2938 | 0.1832 | 1.5987 | 0.3392 | 0.2077 | 3.2064 | 0.9495 | 0.7895 | 0.2190 | 0.3097 |
| 40 | 0.2938 | 1.3234 | 0.2831 | 0.1756 | 1.5706 | 0.3332 | 0.2078 | 1.8130 | 0.3847 | 0.2356 | 3.6361 | 1.0767 | 0.8954 | 0.2483 | 0.3512 |
| 45 | 0.3277 | 1.4759 | 0.3158 | 0.1958 | 1.7515 | 0.3716 | 0.2317 | 2.0218 | 0.4290 | 0.2627 | 4.0551 | 1.2008 | 0.9985 | 0.2769 | 0.3917 |
| 50 | 0.3606 | 1.6241 | 0.3475 | 0.2155 | 1.9274 | 0.4089 | 0.2550 | 2.2249 | 0.4721 | 0.2891 | 4.4623 | 1.3214 | 1.0988 | 0.3048 | 0.4310 |
| 55 | 0.3925 | 1.7677 | 0.3782 | 0.2346 | 2.0979 | 0.4450 | 0.2775 | 2.4217 | 0.5139 | 0.3147 | 4.8570 | 1.4382 | 1.1960 | 0.3317 | 0.4691 |
| 60 | 0.4233 | 1.9065 | 0.4079 | 0.2530 | 2.2626 | 0.4800 | 0.2993 | 2.6118 | 0.5542 | 0.3394 | 5.2383 | 1.5512 | 1.2899 | 0.3577 | 0.5059 |
| 65 | 0.4530 | 2.0402 | 0.4365 | 0.2707 | 2.4212 | 0.5136 | 0.3203 | 2.7949 | 0.5931 | 0.3632 | 5.6055 | 1.6599 | 1.3803 | 0.3828 | 0.5414 |
| 70 | 0.4815 | 2.1685 | 0.4640 | 0.2877 | 2.5736 | 0.5459 | 0.3405 | 2.9708 | 0.6304 | 0.3860 | 5.9582 | 1.7643 | 1.4672 | 0.4069 | 0.5755 |
| 75 | 0.5088 | 2.2914 | 0.4902 | 0.3040 | 2.7194 | 0.5769 | 0.3597 | 3.1391 | 0.6661 | 0.4079 | 6.2958 | 1.8643 | 1.5503 | 0.4300 | 0.6081 |
| 80 | 0.5348 | 2.4086 | 0.5153 | 0.3196 | 2.8585 | 0.6064 | 0.3781 | 3.2997 | 0.7002 | 0.4288 | 6.6180 | 1.9597 | 1.6296 | 0.4520 | 0.6392 |
| 85 | 0.5595 | 2.5202 | 0.5392 | 0.3344 | 2.9909 | 0.6345 | 0.3957 | 3.4525 | 0.7326 | 0.4486 | 6.9244 | 2.0504 | 1.7051 | 0.4729 | 0.6688 |

TABLE 5. Estimation—Compton broadening nonrelativistically (component) in the angular region 0°–180° for 17.44, 22.1, 58.83, and 60 keV photons—Continued

| θ | H | | C | | N | | | O | | | P | | | | |
|----------|---------|--------|--------|--------|--------|---------|--------|--------|--------|--------|---------|--------|--------|--------|--------|
| | CB(K) | CB(K) | L1 | L1,L2 | CB(K) | L1 | L2,L3 | CB(K) | L1 | L2,L3 | CB(K) | L1 | L2,L3 | M1 | M2,M3 |
| 90 | 0.5830 | 2.6259 | 0.5618 | 0.3484 | 3.1163 | 0.6611 | 0.4123 | 3.5973 | 0.7633 | 0.4675 | 7.2149 | 2.1365 | 1.7766 | 0.4927 | 0.6968 |
| 95 | 0.6052 | 2.7257 | 0.5832 | 0.3617 | 3.2348 | 0.6862 | 0.4279 | 3.7341 | 0.7924 | 0.4852 | 7.4892 | 2.2177 | 1.8441 | 0.5115 | 0.7233 |
| 100 | 0.6260 | 2.8197 | 0.6033 | 0.3741 | 3.3463 | 0.7099 | 0.4427 | 3.8628 | 0.8197 | 0.5019 | 7.7473 | 2.2941 | 1.9077 | 0.5291 | 0.7483 |
| 105 | 0.6456 | 2.9077 | 0.6221 | 0.3858 | 3.4508 | 0.7320 | 0.4565 | 3.9834 | 0.8453 | 0.5176 | 7.9892 | 2.3658 | 1.9673 | 0.5456 | 0.7716 |
| 110 | 0.6638 | 2.9898 | 0.6397 | 0.3967 | 3.5483 | 0.7527 | 0.4694 | 4.0959 | 0.8691 | 0.5322 | 8.2148 | 2.4326 | 2.0228 | 0.5610 | 0.7934 |
| 115 | 0.6807 | 3.0660 | 0.6560 | 0.4068 | 3.6387 | 0.7719 | 0.4814 | 4.2003 | 0.8913 | 0.5458 | 8.4243 | 2.4946 | 2.0744 | 0.5753 | 0.8136 |
| 120 | 0.6964 | 3.1364 | 0.6710 | 0.4162 | 3.7222 | 0.7896 | 0.4924 | 4.2967 | 0.9118 | 0.5583 | 8.6176 | 2.5518 | 2.1220 | 0.5885 | 0.8323 |
| 125 | 0.7107 | 3.2009 | 0.6848 | 0.4247 | 3.7988 | 0.8058 | 0.5025 | 4.3851 | 0.9305 | 0.5698 | 8.7948 | 2.6043 | 2.1656 | 0.6006 | 0.8494 |
| 130 | 0.7237 | 3.2596 | 0.6974 | 0.4325 | 3.8685 | 0.8206 | 0.5118 | 4.4655 | 0.9476 | 0.5803 | 8.9562 | 2.6521 | 2.2054 | 0.6117 | 0.8650 |
| 135 | 0.7355 | 3.3126 | 0.7087 | 0.4395 | 3.9313 | 0.8340 | 0.5201 | 4.5381 | 0.9630 | 0.5897 | 9.1017 | 2.6952 | 2.2412 | 0.6216 | 0.8791 |
| 140 | 0.7460 | 3.3599 | 0.7188 | 0.4458 | 3.9874 | 0.8459 | 0.5275 | 4.6028 | 0.9767 | 0.5981 | 9.2315 | 2.7336 | 2.2732 | 0.6305 | 0.8916 |
| 145 | 0.7552 | 3.4014 | 0.7277 | 0.4513 | 4.0368 | 0.8563 | 0.5340 | 4.6598 | 0.9888 | 0.6055 | 9.3458 | 2.7675 | 2.3013 | 0.6383 | 0.9026 |
| 150 | 0.7632 | 3.4374 | 0.7354 | 0.4561 | 4.0794 | 0.8654 | 0.5397 | 4.7090 | 0.9993 | 0.6119 | 9.4446 | 2.7967 | 2.3256 | 0.6450 | 0.9122 |
| 155 | 0.7699 | 3.4678 | 0.7419 | 0.4601 | 4.1155 | 0.8730 | 0.5444 | 4.7506 | 1.0081 | 0.6173 | 9.5280 | 2.8214 | 2.3462 | 0.6507 | 0.9202 |
| 160 | 0.7754 | 3.4926 | 0.7472 | 0.4634 | 4.1449 | 0.8793 | 0.5483 | 4.7846 | 1.0153 | 0.6217 | 9.5962 | 2.8416 | 2.3630 | 0.6554 | 0.9268 |
| 165 | 0.7797 | 3.5119 | 0.7514 | 0.4660 | 4.1678 | 0.8841 | 0.5513 | 4.8111 | 1.0209 | 0.6252 | 9.6492 | 2.8573 | 2.3760 | 0.6590 | 0.9319 |
| 170 | 0.7828 | 3.5256 | 0.7543 | 0.4678 | 4.1842 | 0.8876 | 0.5535 | 4.8300 | 1.0249 | 0.6276 | 9.6870 | 2.8685 | 2.3853 | 0.6616 | 0.9356 |
| 175 | 0.7846 | 3.5339 | 0.7561 | 0.4689 | 4.1940 | 0.8897 | 0.5548 | 4.8413 | 1.0273 | 0.6291 | 9.7099 | 2.8753 | 2.3910 | 0.6631 | 0.9378 |
| 180 | 0.7853 | 3.5368 | 0.7567 | 0.4693 | 4.1974 | 0.8904 | 0.5553 | 4.8452 | 1.0281 | 0.6296 | 9.7177 | 2.8776 | 2.3929 | 0.6637 | 0.9386 |
| θ | S | | | | | K | | | | | Ca | | | | |
| | CB(K) | L1 | L2,L3 | M1 | M2,M3 | CB(K) | L1 | L2,L3 | M1 | M2,M3 | CB(K) | L1 | L2,L3 | M1 | M2,M3 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 5 | 0.5045 | 0.1529 | 0.1303 | 0.0380 | 0.0203 | 0.6094 | 0.1970 | 0.1746 | 0.0592 | 0.0430 | 0.6447 | 0.2123 | 0.1898 | 0.0673 | 0.0507 |
| 10 | 1.0073 | 0.3053 | 0.2602 | 0.0758 | 0.0405 | 1.2168 | 0.3934 | 0.3486 | 0.1181 | 0.0860 | 1.2873 | 0.4240 | 0.3790 | 0.1344 | 0.1013 |
| 15 | 1.5070 | 0.4567 | 0.3893 | 0.1134 | 0.0606 | 1.8203 | 0.5885 | 0.5215 | 0.1767 | 0.1286 | 1.9258 | 0.6343 | 0.5670 | 0.2010 | 0.1515 |
| 20 | 2.0018 | 0.6066 | 0.5172 | 0.1506 | 0.0805 | 2.4181 | 0.7818 | 0.6927 | 0.2348 | 0.1708 | 2.5582 | 0.8426 | 0.7532 | 0.2671 | 0.2013 |
| 25 | 2.4904 | 0.7547 | 0.6434 | 0.1874 | 0.1002 | 3.0082 | 0.9725 | 0.8618 | 0.2921 | 0.2125 | 3.1825 | 1.0483 | 0.9371 | 0.3323 | 0.2504 |
| 30 | 2.9712 | 0.9004 | 0.7676 | 0.2236 | 0.1195 | 3.5891 | 1.1603 | 1.0281 | 0.3485 | 0.2535 | 3.7970 | 1.2507 | 1.1180 | 0.3964 | 0.2988 |
| 35 | 3.4429 | 1.0433 | 0.8895 | 0.2591 | 0.1385 | 4.1589 | 1.3445 | 1.1914 | 0.4038 | 0.2938 | 4.3998 | 1.4492 | 1.2955 | 0.4593 | 0.3462 |
| 40 | 3.9043 | 1.1831 | 1.0087 | 0.2938 | 0.1571 | 4.7162 | 1.5247 | 1.3510 | 0.4579 | 0.3332 | 4.9894 | 1.6435 | 1.4691 | 0.5209 | 0.3926 |
| 45 | 4.3542 | 1.3195 | 1.1249 | 0.3277 | 0.1752 | 5.2597 | 1.7004 | 1.5067 | 0.5107 | 0.3716 | 5.5643 | 1.8328 | 1.6384 | 0.5809 | 0.4379 |
| 50 | 4.7915 | 1.4520 | 1.2379 | 0.3606 | 0.1927 | 5.7879 | 1.8712 | 1.6580 | 0.5619 | 0.4089 | 6.1232 | 2.0169 | 1.8029 | 0.6393 | 0.4819 |
| 55 | 5.2153 | 1.5804 | 1.3474 | 0.3925 | 0.2098 | 6.2998 | 2.0367 | 1.8047 | 0.6116 | 0.4450 | 6.6647 | 2.1953 | 1.9624 | 0.6958 | 0.5245 |
| 60 | 5.6247 | 1.7045 | 1.4532 | 0.4233 | 0.2263 | 6.7944 | 2.1966 | 1.9464 | 0.6597 | 0.4800 | 7.1879 | 2.3676 | 2.1165 | 0.7504 | 0.5656 |
| 65 | 6.0191 | 1.8240 | 1.5551 | 0.4530 | 0.2421 | 7.2707 | 2.3506 | 2.0828 | 0.7059 | 0.5136 | 7.6919 | 2.5336 | 2.2649 | 0.8030 | 0.6053 |
| 70 | 6.3978 | 1.9387 | 1.6529 | 0.4815 | 0.2574 | 7.7282 | 2.4985 | 2.2139 | 0.7503 | 0.5459 | 8.1759 | 2.6930 | 2.4073 | 0.8536 | 0.6434 |
| 75 | 6.7603 | 2.0486 | 1.7466 | 0.5088 | 0.2719 | 8.1661 | 2.6400 | 2.3393 | 0.7928 | 0.5769 | 8.6391 | 2.8456 | 2.5438 | 0.9019 | 0.6798 |
| 80 | 7.1062 | 2.1534 | 1.8359 | 0.5348 | 0.2859 | 8.5839 | 2.7751 | 2.4590 | 0.8334 | 0.6064 | 9.0812 | 2.9912 | 2.6739 | 0.9481 | 0.7146 |
| 85 | 7.4352 | 2.2531 | 1.9209 | 0.5595 | 0.2991 | 8.9814 | 2.9036 | 2.5729 | 0.8720 | 0.6345 | 9.5017 | 3.1297 | 2.7977 | 0.9920 | 0.7477 |
| 90 | 7.7471 | 2.3476 | 2.0015 | 0.5830 | 0.3116 | 9.3581 | 3.0254 | 2.6808 | 0.9086 | 0.6611 | 9.9002 | 3.2610 | 2.9151 | 1.0336 | 0.7791 |
| 95 | 8.0417 | 2.4369 | 2.0776 | 0.6052 | 0.3235 | 9.7139 | 3.1405 | 2.7827 | 0.9431 | 0.6862 | 10.2766 | 3.3850 | 3.0259 | 1.0729 | 0.8087 |
| 100 | 8.3188 | 2.5209 | 2.1492 | 0.6260 | 0.3346 | 10.0487 | 3.2487 | 2.8786 | 0.9756 | 0.7099 | 10.6308 | 3.5017 | 3.1302 | 1.1099 | 0.8366 |
| 105 | 8.5786 | 2.5996 | 2.2163 | 0.6456 | 0.3451 | 10.3625 | 3.3501 | 2.9685 | 1.0061 | 0.7320 | 10.9628 | 3.6110 | 3.2279 | 1.1445 | 0.8627 |
| 110 | 8.8208 | 2.6730 | 2.2789 | 0.6638 | 0.3548 | 10.6551 | 3.4447 | 3.0523 | 1.0345 | 0.7527 | 11.2724 | 3.7130 | 3.3191 | 1.1768 | 0.8871 |
| 115 | 9.0457 | 2.7411 | 2.3370 | 0.6807 | 0.3639 | 10.9268 | 3.5326 | 3.1302 | 1.0609 | 0.7719 | 11.5598 | 3.8076 | 3.4037 | 1.2068 | 0.9097 |
| 120 | 9.2533 | 2.8040 | 2.3906 | 0.6964 | 0.3722 | 11.1775 | 3.6136 | 3.2020 | 1.0852 | 0.7896 | 11.8250 | 3.8950 | 3.4818 | 1.2345 | 0.9306 |
| 125 | 9.4436 | 2.8617 | 2.4398 | 0.7107 | 0.3799 | 11.4074 | 3.6880 | 3.2678 | 1.1075 | 0.8058 | 12.0683 | 3.9751 | 3.5534 | 1.2599 | 0.9497 |
| 130 | 9.6169 | 2.9142 | 2.4846 | 0.7237 | 0.3868 | 11.6167 | 3.7556 | 3.3278 | 1.1278 | 0.8206 | 12.2896 | 4.0481 | 3.6186 | 1.2830 | 0.9671 |
| 135 | 9.7731 | 2.9616 | 2.5249 | 0.7355 | 0.3931 | 11.8055 | 3.8166 | 3.3819 | 1.1462 | 0.8340 | 12.4893 | 4.1138 | 3.6774 | 1.3039 | 0.9828 |
| 140 | 9.9125 | 3.0038 | 2.5610 | 0.7460 | 0.3987 | 11.9739 | 3.8711 | 3.4301 | 1.1625 | 0.8459 | 12.6675 | 4.1725 | 3.7299 | 1.3225 | 0.9969 |
| 145 | 10.0352 | 3.0410 | 2.5927 | 0.7552 | 0.4037 | 12.1220 | 3.9190 | 3.4725 | 1.1769 | 0.8563 | 12.8242 | 4.2242 | 3.7760 | 1.3388 | 1.0092 |
| 150 | 10.1413 | 3.0731 | 2.6201 | 0.7632 | 0.4079 | 12.2502 | 3.9604 | 3.5093 | 1.1893 | 0.8654 | 12.9598 | 4.2688 | 3.8160 | 1.3530 | 1.0199 |
| 155 | 10.2309 | 3.1003 | 2.6432 | 0.7699 | 0.4115 | 12.3584 | 3.9954 | 3.5403 | 1.1999 | 0.8730 | 13.0743 | 4.3065 | 3.8497 | 1.3649 | 1.0289 |
| 160 | 10.3041 | 3.1225 | 2.6621 | 0.7754 | 0.4145 | 12.4468 | 4.0240 | 3.5656 | 1.2084 | 0.8793 | 13.1678 | 4.3373 | 3.8772 | 1.3747 | 1.0362 |
| 165 | 10.3610 | 3.1397 | 2.6768 | 0.7797 | 0.4168 | 12.5156 | 4.0462 | 3.5853 | 1.2151 | 0.8841 | 13.2406 | 4.3613 | 3.8986 | 1.3823 | 1.0420 |
| 170 | 10.4017 | 3.1520 | 2.6873 | 0.7828 | 0.4184 | 12.5647 | 4.0621 | 3.5994 | 1.2199 | 0.8876 | 13.2926 | 4.3784 | 3.9139 | 1.3877 | 1.0460 |
| 175 | 10.4262 | 3.1595 | 2.6937 | 0.7846 | 0.4194 | 12.5943 | 4.0717 | 3.6078 | 1.2228 | 0.8897 | 13.3239 | 4.3887 | 3.9232 | 1.3910 | 1.0485 |
| 180 | 10.4345 | 3.1620 | 2.6958 | 0.7853 | 0.4197 | 12.6044 | 4.0749 | 3.6107 | 1.2237 | 0.8904 | 13.3346 | 4.3922 | 3.9263 | 1.3921 | 1.0493 |

TABLE 5. Estimation—Compton broadening nonrelativistically (component) in the angular region 0°–180° for 17.44, 22.1, 58.83, and 60 keV photons—Continued

| Am-241: 60 keV | | | | | | | | | | | | | | | |
|----------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|---------|--------|--------|--------|--------|
| θ | H | | C | | N | | O | | P | | | | | | |
| | CB(K) | CB(K) | L1 | L1,L2 | CB(K) | L1 | L2,L3 | CB(K) | L1 | L2,L3 | CB(K) | L1 | L2,L3 | M1 | M2,M3 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 5 | 0.0387 | 0.1744 | 0.0373 | 0.0231 | 0.2070 | 0.0439 | 0.0274 | 0.2389 | 0.0507 | 0.0310 | 0.4791 | 0.1419 | 0.1180 | 0.0327 | 0.0146 |
| 10 | 0.0773 | 0.3482 | 0.0745 | 0.0462 | 0.4132 | 0.0877 | 0.0547 | 0.4770 | 0.1012 | 0.0620 | 0.9567 | 0.2833 | 0.2356 | 0.0653 | 0.0292 |
| 15 | 0.1157 | 0.5209 | 0.1114 | 0.0691 | 0.6182 | 0.1311 | 0.0818 | 0.7136 | 0.1514 | 0.0927 | 1.4312 | 0.4238 | 0.3524 | 0.0977 | 0.0437 |
| 20 | 0.1536 | 0.6919 | 0.1480 | 0.0918 | 0.8212 | 0.1742 | 0.1086 | 0.9479 | 0.2011 | 0.1232 | 1.9012 | 0.5630 | 0.4681 | 0.1298 | 0.0581 |
| 25 | 0.1911 | 0.8608 | 0.1842 | 0.1142 | 1.0216 | 0.2167 | 0.1351 | 1.1792 | 0.2502 | 0.1532 | 2.3651 | 0.7003 | 0.5824 | 0.1615 | 0.0722 |
| 30 | 0.2280 | 1.0269 | 0.2197 | 0.1363 | 1.2187 | 0.2585 | 0.1612 | 1.4068 | 0.2985 | 0.1828 | 2.8216 | 0.8355 | 0.6948 | 0.1927 | 0.0862 |
| 35 | 0.2642 | 1.1899 | 0.2546 | 0.1579 | 1.4122 | 0.2996 | 0.1868 | 1.6301 | 0.3459 | 0.2118 | 3.2694 | 0.9681 | 0.8051 | 0.2233 | 0.0999 |
| 40 | 0.2996 | 1.3493 | 0.2887 | 0.1790 | 1.6013 | 0.3397 | 0.2118 | 1.8485 | 0.3922 | 0.2402 | 3.7073 | 1.0978 | 0.9129 | 0.2532 | 0.1132 |
| 45 | 0.3341 | 1.5047 | 0.3219 | 0.1996 | 1.7857 | 0.3788 | 0.2362 | 2.0613 | 0.4374 | 0.2679 | 4.1342 | 1.2242 | 1.0180 | 0.2823 | 0.1263 |
| 50 | 0.3676 | 1.6557 | 0.3542 | 0.2197 | 1.9649 | 0.4168 | 0.2599 | 2.2682 | 0.4813 | 0.2947 | 4.5491 | 1.3471 | 1.1202 | 0.3107 | 0.1389 |
| 55 | 0.4001 | 1.8020 | 0.3855 | 0.2391 | 2.1385 | 0.4537 | 0.2829 | 2.4686 | 0.5238 | 0.3208 | 4.9511 | 1.4661 | 1.2192 | 0.3381 | 0.1512 |
| 60 | 0.4315 | 1.9433 | 0.4158 | 0.2578 | 2.3063 | 0.4892 | 0.3051 | 2.6622 | 0.5649 | 0.3459 | 5.3394 | 1.5811 | 1.3148 | 0.3647 | 0.1631 |
| 65 | 0.4617 | 2.0794 | 0.4449 | 0.2759 | 2.4678 | 0.5235 | 0.3265 | 2.8486 | 0.6045 | 0.3702 | 5.7133 | 1.6918 | 1.4068 | 0.3902 | 0.1745 |
| 70 | 0.4907 | 2.2100 | 0.4728 | 0.2932 | 2.6228 | 0.5564 | 0.3470 | 3.0276 | 0.6425 | 0.3934 | 6.0723 | 1.7981 | 1.4952 | 0.4147 | 0.1855 |
| 75 | 0.5184 | 2.3351 | 0.4996 | 0.3098 | 2.7712 | 0.5879 | 0.3666 | 3.1989 | 0.6788 | 0.4157 | 6.4158 | 1.8998 | 1.5798 | 0.4382 | 0.1960 |
| 80 | 0.5449 | 2.4544 | 0.5251 | 0.3257 | 2.9128 | 0.6179 | 0.3853 | 3.3623 | 0.7135 | 0.4369 | 6.7436 | 1.9969 | 1.6605 | 0.4606 | 0.2060 |
| 85 | 0.5701 | 2.5678 | 0.5494 | 0.3407 | 3.0474 | 0.6464 | 0.4031 | 3.5177 | 0.7465 | 0.4571 | 7.0552 | 2.0892 | 1.7373 | 0.4818 | 0.2155 |
| 90 | 0.5940 | 2.6753 | 0.5724 | 0.3550 | 3.1750 | 0.6735 | 0.4200 | 3.6650 | 0.7777 | 0.4762 | 7.3506 | 2.1766 | 1.8100 | 0.5020 | 0.2245 |
| 95 | 0.6165 | 2.7768 | 0.5941 | 0.3684 | 3.2954 | 0.6991 | 0.4359 | 3.8040 | 0.8072 | 0.4943 | 7.6295 | 2.2592 | 1.8787 | 0.5211 | 0.2330 |
| 100 | 0.6377 | 2.8723 | 0.6145 | 0.3811 | 3.4087 | 0.7231 | 0.4509 | 3.9348 | 0.8350 | 0.5113 | 7.8918 | 2.3369 | 1.9433 | 0.5390 | 0.2410 |
| 105 | 0.6576 | 2.9617 | 0.6337 | 0.3930 | 3.5149 | 0.7456 | 0.4650 | 4.0574 | 0.8610 | 0.5272 | 8.1376 | 2.4097 | 2.0038 | 0.5558 | 0.2485 |
| 110 | 0.6761 | 3.0451 | 0.6515 | 0.4040 | 3.6139 | 0.7666 | 0.4781 | 4.1717 | 0.8852 | 0.5421 | 8.3668 | 2.4776 | 2.0602 | 0.5714 | 0.2555 |
| 115 | 0.6933 | 3.1226 | 0.6681 | 0.4143 | 3.7058 | 0.7861 | 0.4902 | 4.2777 | 0.9077 | 0.5559 | 8.5795 | 2.5406 | 2.1126 | 0.5859 | 0.2620 |
| 120 | 0.7092 | 3.1940 | 0.6834 | 0.4238 | 3.7906 | 0.8041 | 0.5014 | 4.3756 | 0.9285 | 0.5686 | 8.7758 | 2.5987 | 2.1610 | 0.5993 | 0.2680 |
| 125 | 0.7237 | 3.2595 | 0.6974 | 0.4325 | 3.8683 | 0.8206 | 0.5117 | 4.4654 | 0.9475 | 0.5802 | 8.9558 | 2.6520 | 2.2053 | 0.6116 | 0.2735 |
| 130 | 0.7369 | 3.3191 | 0.7101 | 0.4404 | 3.9391 | 0.8356 | 0.5211 | 4.5470 | 0.9649 | 0.5909 | 9.1196 | 2.7005 | 2.2456 | 0.6228 | 0.2785 |
| 135 | 0.7489 | 3.3729 | 0.7216 | 0.4475 | 4.0029 | 0.8491 | 0.5295 | 4.6207 | 0.9805 | 0.6004 | 9.2673 | 2.7442 | 2.2820 | 0.6329 | 0.2830 |
| 140 | 0.7595 | 3.4208 | 0.7319 | 0.4539 | 4.0598 | 0.8612 | 0.5371 | 4.6864 | 0.9944 | 0.6090 | 9.3990 | 2.7832 | 2.3144 | 0.6419 | 0.2871 |
| 145 | 0.7689 | 3.4630 | 0.7409 | 0.4595 | 4.1098 | 0.8718 | 0.5437 | 4.7442 | 1.0067 | 0.6165 | 9.5150 | 2.8176 | 2.3430 | 0.6498 | 0.2906 |
| 150 | 0.7770 | 3.4995 | 0.7487 | 0.4643 | 4.1531 | 0.8810 | 0.5494 | 4.7941 | 1.0173 | 0.6230 | 9.6152 | 2.8472 | 2.3677 | 0.6567 | 0.2937 |
| 155 | 0.7838 | 3.5303 | 0.7553 | 0.4684 | 4.1897 | 0.8888 | 0.5542 | 4.8363 | 1.0263 | 0.6285 | 9.6998 | 2.8723 | 2.3885 | 0.6624 | 0.2963 |
| 160 | 0.7894 | 3.5555 | 0.7607 | 0.4718 | 4.2196 | 0.8951 | 0.5582 | 4.8708 | 1.0336 | 0.6329 | 9.7690 | 2.8928 | 2.4055 | 0.6672 | 0.2984 |
| 165 | 0.7938 | 3.5750 | 0.7649 | 0.4744 | 4.2428 | 0.9000 | 0.5613 | 4.8976 | 1.0393 | 0.6364 | 9.8228 | 2.9087 | 2.4188 | 0.6708 | 0.3000 |
| 170 | 0.7969 | 3.5890 | 0.7679 | 0.4762 | 4.2594 | 0.9036 | 0.5635 | 4.9168 | 1.0433 | 0.6389 | 9.8612 | 2.9201 | 2.4282 | 0.6735 | 0.3012 |
| 175 | 0.7987 | 3.5974 | 0.7697 | 0.4773 | 4.2694 | 0.9057 | 0.5648 | 4.9283 | 1.0458 | 0.6404 | 9.8843 | 2.9269 | 2.4339 | 0.6750 | 0.3019 |
| 180 | 0.7994 | 3.6003 | 0.7703 | 0.4777 | 4.2728 | 0.9064 | 0.5652 | 4.9322 | 1.0466 | 0.6409 | 9.8922 | 2.9293 | 2.4359 | 0.6756 | 0.3021 |
| θ | S | | | | | K | | | | | Ca | | | | |
| | CB(K) | L1 | L2,L3 | M1 | M2,M3 | CB(K) | L1 | L2,L3 | M1 | M2,M3 | CB(K) | L1 | L2,L3 | M1 | M2,M3 |
| 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 5 | 0.5145 | 0.1559 | 0.1329 | 0.0387 | 0.0207 | 0.6215 | 0.2009 | 0.1780 | 0.0603 | 0.0439 | 0.6575 | 0.2166 | 0.1936 | 0.0686 | 0.0517 |
| 10 | 1.0273 | 0.3113 | 0.2654 | 0.0773 | 0.0413 | 1.2409 | 0.4012 | 0.3555 | 0.1205 | 0.0877 | 1.3128 | 0.4324 | 0.3866 | 0.1371 | 0.1033 |
| 15 | 1.5368 | 0.4657 | 0.3970 | 0.1157 | 0.0618 | 1.8564 | 0.6002 | 0.5318 | 0.1802 | 0.1311 | 1.9639 | 0.6469 | 0.5783 | 0.2050 | 0.1545 |
| 20 | 2.0414 | 0.6186 | 0.5274 | 0.1536 | 0.0821 | 2.4659 | 0.7972 | 0.7064 | 0.2394 | 0.1742 | 2.6088 | 0.8593 | 0.7681 | 0.2724 | 0.2053 |
| 25 | 2.5395 | 0.7696 | 0.6561 | 0.1911 | 0.1022 | 3.0676 | 0.9918 | 0.8788 | 0.2978 | 0.2167 | 3.2454 | 1.0690 | 0.9556 | 0.3388 | 0.2554 |
| 30 | 3.0297 | 0.9181 | 0.7827 | 0.2280 | 0.1219 | 3.6598 | 1.1832 | 1.0484 | 0.3553 | 0.2585 | 3.8718 | 1.2753 | 1.1400 | 0.4042 | 0.3047 |
| 35 | 3.5106 | 1.0638 | 0.9070 | 0.2642 | 0.1412 | 4.2406 | 1.3710 | 1.2148 | 0.4117 | 0.2996 | 4.4863 | 1.4777 | 1.3210 | 0.4684 | 0.3530 |
| 40 | 3.9808 | 1.2063 | 1.0285 | 0.2996 | 0.1601 | 4.8086 | 1.5546 | 1.3775 | 0.4669 | 0.3397 | 5.0872 | 1.6757 | 1.4979 | 0.5311 | 0.4003 |
| 45 | 4.4392 | 1.3452 | 1.1469 | 0.3341 | 0.1786 | 5.3623 | 1.7336 | 1.5361 | 0.5206 | 0.3788 | 5.6730 | 1.8686 | 1.6704 | 0.5923 | 0.4464 |
| 50 | 4.8847 | 1.4802 | 1.2620 | 0.3676 | 0.1965 | 5.9005 | 1.9076 | 1.6903 | 0.5729 | 0.4168 | 6.2423 | 2.0561 | 1.8380 | 0.6517 | 0.4912 |
| 55 | 5.3163 | 1.6110 | 1.3735 | 0.4001 | 0.2139 | 6.4219 | 2.0762 | 1.8396 | 0.6235 | 0.4537 | 6.7939 | 2.2378 | 2.0004 | 0.7093 | 0.5346 |
| 60 | 5.7333 | 1.7374 | 1.4812 | 0.4315 | 0.2306 | 6.9255 | 2.2390 | 1.9839 | 0.6724 | 0.4892 | 7.3267 | 2.4133 | 2.1573 | 0.7649 | 0.5766 |
| 65 | 6.1348 | 1.8590 | 1.5850 | 0.4617 | 0.2468 | 7.4105 | 2.3958 | 2.1229 | 0.7195 | 0.5235 | 7.8398 | 2.5823 | 2.3084 | 0.8185 | 0.6169 |
| 70 | 6.5202 | 1.9758 | 1.6845 | 0.4907 | 0.2623 | 7.8761 | 2.5463 | 2.2562 | 0.7647 | 0.5564 | 8.3324 | 2.7446 | 2.4534 | 0.8699 | 0.6557 |
| 75 | 6.8891 | 2.0876 | 1.7798 | 0.5184 | 0.2771 | 8.3217 | 2.6904 | 2.3839 | 0.8079 | 0.5879 | 8.8038 | 2.8999 | 2.5922 | 0.9191 | 0.6928 |
| 80 | 7.2411 | 2.1943 | 1.8708 | 0.5449 | 0.2913 | 8.7468 | 2.8278 | 2.5057 | 0.8492 | 0.6179 | 9.2535 | 3.0480 | 2.7247 | 0.9661 | 0.7282 |
| 85 | 7.5757 | 2.2957 | 1.9572 | 0.5701 | 0.3047 | 9.1511 | 2.9585 | 2.6215 | 0.8885 | 0.6464 | 9.6812 | 3.1889 | 2.8506 | 1.0107 | 0.7618 |
| 90 | 7.8928 | 2.3918 | 2.0392 | 0.5940 | 0.3175 | 9.5341 | 3.0823 | 2.7312 | 0.9257 | 0.6735 | 10.0864 | 3.3224 | 2.9699 | 1.0530 | 0.7937 |

TABLE 5. Estimation—Compton broadening nonrelativistically (component) in the angular region 0°–180° for 17.44, 22.1, 58.83, and 60 keV photons—Continued

| θ | S | | | | | K | | | | | Ca | | | | |
|----------|---------|--------|--------|--------|--------|---------|--------|--------|--------|--------|---------|--------|--------|--------|--------|
| | CB(K) | L1 | L2,L3 | M1 | M2,M3 | CB(K) | L1 | L2,L3 | M1 | M2,M3 | CB(K) | L1 | L2,L3 | M1 | M2,M3 |
| 95 | 8.1923 | 2.4825 | 2.1165 | 0.6165 | 0.3295 | 9.8959 | 3.1993 | 2.8348 | 0.9608 | 0.6991 | 10.4691 | 3.4484 | 3.0826 | 1.0930 | 0.8239 |
| 100 | 8.4740 | 2.5679 | 2.1893 | 0.6377 | 0.3409 | 10.2362 | 3.3093 | 2.9323 | 0.9938 | 0.7231 | 10.8291 | 3.5670 | 3.1886 | 1.1306 | 0.8522 |
| 105 | 8.7379 | 2.6479 | 2.2575 | 0.6576 | 0.3515 | 10.5550 | 3.4124 | 3.0236 | 1.0248 | 0.7456 | 11.1664 | 3.6781 | 3.2879 | 1.1658 | 0.8787 |
| 110 | 8.9840 | 2.7225 | 2.3211 | 0.6761 | 0.3614 | 10.8523 | 3.5085 | 3.1088 | 1.0536 | 0.7666 | 11.4809 | 3.7817 | 3.3805 | 1.1986 | 0.9035 |
| 115 | 9.2125 | 2.7917 | 2.3801 | 0.6933 | 0.3706 | 11.1282 | 3.5977 | 3.1878 | 1.0804 | 0.7861 | 11.7728 | 3.8778 | 3.4665 | 1.2291 | 0.9264 |
| 120 | 9.4232 | 2.8555 | 2.4345 | 0.7092 | 0.3791 | 11.3828 | 3.6800 | 3.2608 | 1.1051 | 0.8041 | 12.0422 | 3.9666 | 3.5458 | 1.2572 | 0.9476 |
| 125 | 9.6165 | 2.9141 | 2.4845 | 0.7237 | 0.3868 | 11.6163 | 3.7555 | 3.3277 | 1.1278 | 0.8206 | 12.2892 | 4.0479 | 3.6185 | 1.2830 | 0.9671 |
| 130 | 9.7924 | 2.9674 | 2.5299 | 0.7369 | 0.3939 | 11.8287 | 3.8241 | 3.3885 | 1.1484 | 0.8356 | 12.5139 | 4.1219 | 3.6847 | 1.3064 | 0.9848 |
| 135 | 9.9510 | 3.0155 | 2.5709 | 0.7489 | 0.4003 | 12.0203 | 3.8861 | 3.4434 | 1.1670 | 0.8491 | 12.7166 | 4.1887 | 3.7443 | 1.3276 | 1.0007 |
| 140 | 10.0924 | 3.0583 | 2.6074 | 0.7595 | 0.4060 | 12.1911 | 3.9413 | 3.4923 | 1.1836 | 0.8612 | 12.8974 | 4.2482 | 3.7976 | 1.3465 | 1.0149 |
| 145 | 10.2169 | 3.0961 | 2.6396 | 0.7689 | 0.4110 | 12.3415 | 3.9899 | 3.5354 | 1.1982 | 0.8718 | 13.0564 | 4.3006 | 3.8444 | 1.3631 | 1.0275 |
| 150 | 10.3245 | 3.1287 | 2.6674 | 0.7770 | 0.4153 | 12.4715 | 4.0320 | 3.5727 | 1.2108 | 0.8810 | 13.1940 | 4.3459 | 3.8849 | 1.3774 | 1.0383 |
| 155 | 10.4154 | 3.1562 | 2.6909 | 0.7838 | 0.4190 | 12.5813 | 4.0675 | 3.6041 | 1.2215 | 0.8888 | 13.3101 | 4.3842 | 3.9191 | 1.3896 | 1.0474 |
| 160 | 10.4897 | 3.1787 | 2.7101 | 0.7894 | 0.4220 | 12.6710 | 4.0965 | 3.6298 | 1.2302 | 0.8951 | 13.4050 | 4.4154 | 3.9470 | 1.3995 | 1.0549 |
| 165 | 10.5474 | 3.1962 | 2.7250 | 0.7938 | 0.4243 | 12.7407 | 4.1190 | 3.6498 | 1.2370 | 0.9000 | 13.4788 | 4.4397 | 3.9688 | 1.4072 | 1.0607 |
| 170 | 10.5887 | 3.2087 | 2.7356 | 0.7969 | 0.4259 | 12.7906 | 4.1351 | 3.6641 | 1.2418 | 0.9036 | 13.5315 | 4.4571 | 3.9843 | 1.4127 | 1.0648 |
| 175 | 10.6135 | 3.2162 | 2.7421 | 0.7987 | 0.4269 | 12.8206 | 4.1448 | 3.6727 | 1.2447 | 0.9057 | 13.5633 | 4.4676 | 3.9936 | 1.4160 | 1.0673 |
| 180 | 10.6220 | 3.2188 | 2.7442 | 0.7994 | 0.4273 | 12.8308 | 4.1481 | 3.6756 | 1.2457 | 0.9064 | 13.5741 | 4.4711 | 3.9968 | 1.4171 | 1.0682 |

CB (K) = Nonrelativistic component of Compton spread for K-shell. CB (L1, L2 and L3) = Nonrelativistic component of Compton spread for L-shell. CB (M1, M2 and M3) = Nonrelativistic component of Compton spread for M-shell.

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