

**Table 110: Muons in Anthracene (C<sub>14</sub>H<sub>10</sub>)**

|          | $\langle Z/A \rangle$ | $\rho$ [g/cm <sup>3</sup> ] | $I$ [eV] | $a$       | $k = m_s$ | $x_0$   | $x_1$                              | $\bar{C}$ | $\delta_0$ |
|----------|-----------------------|-----------------------------|----------|-----------|-----------|---------|------------------------------------|-----------|------------|
|          | 0.52740               | 1.283                       | 69.5     | 0.14677   | 3.2831    | 0.1146  | 2.5213                             | 3.1514    | 0.00       |
| $T$      | $p$<br>[MeV/c]        | Ionization                  | Brems    | Pair prod | Photonucl | Total   | CSDA range<br>[g/cm <sup>2</sup> ] |           |            |
| 10.0 MeV | $4.704 \times 10^1$   | 7.642                       |          |           |           | 7.642   | $7.227 \times 10^{-1}$             |           |            |
| 14.0 MeV | $5.616 \times 10^1$   | 5.959                       |          |           |           | 5.959   | $1.322 \times 10^0$                |           |            |
| 20.0 MeV | $6.802 \times 10^1$   | 4.652                       |          |           |           | 4.652   | $2.474 \times 10^0$                |           |            |
| 30.0 MeV | $8.509 \times 10^1$   | 3.608                       |          |           |           | 3.608   | $4.950 \times 10^0$                |           |            |
| 40.0 MeV | $1.003 \times 10^2$   | 3.080                       |          |           |           | 3.080   | $7.969 \times 10^0$                |           |            |
| 80.0 MeV | $1.527 \times 10^2$   | 2.305                       |          |           |           | 2.305   | $2.345 \times 10^1$                |           |            |
| 100. MeV | $1.764 \times 10^2$   | 2.159                       |          |           |           | 2.159   | $3.244 \times 10^1$                |           |            |
| 140. MeV | $2.218 \times 10^2$   | 2.010                       |          |           |           | 2.010   | $5.173 \times 10^1$                |           |            |
| 200. MeV | $2.868 \times 10^2$   | 1.923                       |          |           |           | 1.924   | $8.237 \times 10^1$                |           |            |
| 300. MeV | $3.917 \times 10^2$   | 1.890                       |          |           | 0.000     | 1.890   | $1.350 \times 10^2$                |           |            |
| 318. MeV | $4.105 \times 10^2$   | 1.889                       |          |           | 0.000     | 1.890   | <i>Minimum ionization</i>          |           |            |
| 400. MeV | $4.945 \times 10^2$   | 1.895                       |          |           | 0.000     | 1.895   | $1.878 \times 10^2$                |           |            |
| 800. MeV | $8.995 \times 10^2$   | 1.965                       | 0.000    |           | 0.000     | 1.966   | $3.952 \times 10^2$                |           |            |
| 1.00 GeV | $1.101 \times 10^3$   | 1.997                       | 0.000    |           | 0.000     | 1.998   | $4.961 \times 10^2$                |           |            |
| 1.40 GeV | $1.502 \times 10^3$   | 2.049                       | 0.000    |           | 0.001     | 2.050   | $6.936 \times 10^2$                |           |            |
| 2.00 GeV | $2.103 \times 10^3$   | 2.107                       | 0.000    | 0.000     | 0.001     | 2.109   | $9.819 \times 10^2$                |           |            |
| 3.00 GeV | $3.104 \times 10^3$   | 2.173                       | 0.001    | 0.001     | 0.001     | 2.175   | $1.448 \times 10^3$                |           |            |
| 4.00 GeV | $4.104 \times 10^3$   | 2.218                       | 0.001    | 0.001     | 0.002     | 2.222   | $1.903 \times 10^3$                |           |            |
| 8.00 GeV | $8.105 \times 10^3$   | 2.322                       | 0.003    | 0.003     | 0.004     | 2.332   | $3.655 \times 10^3$                |           |            |
| 10.0 GeV | $1.011 \times 10^4$   | 2.354                       | 0.004    | 0.004     | 0.005     | 2.367   | $4.506 \times 10^3$                |           |            |
| 14.0 GeV | $1.411 \times 10^4$   | 2.400                       | 0.006    | 0.006     | 0.007     | 2.419   | $6.176 \times 10^3$                |           |            |
| 20.0 GeV | $2.011 \times 10^4$   | 2.447                       | 0.009    | 0.011     | 0.009     | 2.476   | $8.626 \times 10^3$                |           |            |
| 30.0 GeV | $3.011 \times 10^4$   | 2.498                       | 0.015    | 0.018     | 0.014     | 2.545   | $1.261 \times 10^4$                |           |            |
| 40.0 GeV | $4.011 \times 10^4$   | 2.532                       | 0.022    | 0.027     | 0.018     | 2.599   | $1.649 \times 10^4$                |           |            |
| 80.0 GeV | $8.011 \times 10^4$   | 2.612                       | 0.049    | 0.066     | 0.034     | 2.761   | $3.140 \times 10^4$                |           |            |
| 100. GeV | $1.001 \times 10^5$   | 2.636                       | 0.064    | 0.087     | 0.043     | 2.830   | $3.855 \times 10^4$                |           |            |
| 140. GeV | $1.401 \times 10^5$   | 2.673                       | 0.094    | 0.131     | 0.059     | 2.958   | $5.237 \times 10^4$                |           |            |
| 200. GeV | $2.001 \times 10^5$   | 2.712                       | 0.142    | 0.201     | 0.084     | 3.139   | $7.206 \times 10^4$                |           |            |
| 300. GeV | $3.001 \times 10^5$   | 2.756                       | 0.224    | 0.319     | 0.126     | 3.426   | $1.025 \times 10^5$                |           |            |
| 400. GeV | $4.001 \times 10^5$   | 2.787                       | 0.310    | 0.443     | 0.168     | 3.708   | $1.306 \times 10^5$                |           |            |
| 800. GeV | $8.001 \times 10^5$   | 2.862                       | 0.666    | 0.959     | 0.340     | 4.827   | $2.248 \times 10^5$                |           |            |
| 1.00 TeV | $1.000 \times 10^6$   | 2.887                       | 0.851    | 1.226     | 0.427     | 5.390   | $2.640 \times 10^5$                |           |            |
| 1.15 TeV | $1.149 \times 10^6$   | 2.902                       | 0.987    | 1.422     | 0.493     | 5.805   | <i>Muon critical energy</i>        |           |            |
| 1.40 TeV | $1.400 \times 10^6$   | 2.924                       | 1.222    | 1.758     | 0.605     | 6.509   | $3.315 \times 10^5$                |           |            |
| 2.00 TeV | $2.000 \times 10^6$   | 2.964                       | 1.793    | 2.573     | 0.876     | 8.207   | $4.134 \times 10^5$                |           |            |
| 3.00 TeV | $3.000 \times 10^6$   | 3.011                       | 2.751    | 3.930     | 1.343     | 11.035  | $5.181 \times 10^5$                |           |            |
| 4.00 TeV | $4.000 \times 10^6$   | 3.044                       | 3.725    | 5.308     | 1.818     | 13.895  | $5.987 \times 10^5$                |           |            |
| 8.00 TeV | $8.000 \times 10^6$   | 3.126                       | 7.675    | 10.857    | 3.796     | 25.454  | $8.083 \times 10^5$                |           |            |
| 10.0 TeV | $1.000 \times 10^7$   | 3.153                       | 9.673    | 13.653    | 4.815     | 31.294  | $8.790 \times 10^5$                |           |            |
| 14.0 TeV | $1.400 \times 10^7$   | 3.194                       | 13.661   | 19.223    | 6.915     | 42.993  | $9.877 \times 10^5$                |           |            |
| 20.0 TeV | $2.000 \times 10^7$   | 3.238                       | 19.695   | 27.626    | 10.142    | 60.701  | $1.105 \times 10^6$                |           |            |
| 30.0 TeV | $3.000 \times 10^7$   | 3.289                       | 29.742   | 41.606    | 15.745    | 90.382  | $1.239 \times 10^6$                |           |            |
| 40.0 TeV | $4.000 \times 10^7$   | 3.326                       | 39.846   | 55.632    | 21.497    | 120.300 | $1.334 \times 10^6$                |           |            |
| 80.0 TeV | $8.000 \times 10^7$   | 3.417                       | 80.336   | 111.787   | 45.645    | 241.186 | $1.565 \times 10^6$                |           |            |
| 100. TeV | $1.000 \times 10^8$   | 3.447                       | 100.629  | 139.899   | 58.167    | 302.142 | $1.639 \times 10^6$                |           |            |