## Muons in americium (Am)

| Z | $A$ [g/mol] | $\rho$ [g/cm$^3$] | $I$ [eV] | $a$ | $k = m_s$ | $x_0$ | $x_1$ | $\overline{C}$ | $\delta_0$ |
|---|---|---|---|---|---|---|---|---|---|
| 95 (Am) | [243.06138(2)] | 13.670 | 934.0 | 0.20308 | 2.7615 | 0.2274 | 3.5021 | 6.2813 | 0.14 |

| $T$ | $p$ [MeV/$c$] | Ionization | Brems | Pair prod | Photonucl | Total | CSDA range [g/cm$^2$] |
|---|---|---|---|---|---|---|---|
| | | [MeV cm$^2$/g] | | | | | |
| 10.0 MeV | $4.704 \times 10^1$ | 3.660 | | | | 3.660 | $1.602 \times 10^0$ |
| 14.0 MeV | $5.616 \times 10^1$ | 2.933 | | | | 2.933 | $2.834 \times 10^0$ |
| 20.0 MeV | $6.802 \times 10^1$ | 2.345 | | | | 2.345 | $5.144 \times 10^0$ |
| 30.0 MeV | $8.509 \times 10^1$ | 1.860 | | | | 1.860 | $9.992 \times 10^0$ |
| 40.0 MeV | $1.003 \times 10^2$ | 1.609 | | | | 1.609 | $1.581 \times 10^1$ |
| 80.0 MeV | $1.527 \times 10^2$ | 1.239 | | | | 1.239 | $4.496 \times 10^1$ |
| 100. MeV | $1.764 \times 10^2$ | 1.174 | | | | 1.174 | $6.158 \times 10^1$ |
| 140. MeV | $2.218 \times 10^2$ | 1.115 | | | | 1.115 | $9.670 \times 10^1$ |
| 200. MeV | $2.868 \times 10^2$ | 1.090 | | | | 1.090 | $1.513 \times 10^2$ |
| 223. MeV | $3.114 \times 10^2$ | 1.089 | 0.000 | | | 1.089 | *Minimum ionization* |
| 300. MeV | $3.917 \times 10^2$ | 1.097 | 0.000 | | 0.000 | 1.097 | $2.429 \times 10^2$ |
| 400. MeV | $4.945 \times 10^2$ | 1.118 | 0.000 | | 0.000 | 1.119 | $3.332 \times 10^2$ |
| 800. MeV | $8.995 \times 10^2$ | 1.204 | 0.001 | | 0.000 | 1.205 | $6.770 \times 10^2$ |
| 1.00 GeV | $1.101 \times 10^3$ | 1.237 | 0.002 | | 0.000 | 1.239 | $8.406 \times 10^2$ |
| 1.40 GeV | $1.502 \times 10^3$ | 1.289 | 0.003 | | 0.001 | 1.293 | $1.156 \times 10^3$ |
| 2.00 GeV | $2.103 \times 10^3$ | 1.346 | 0.004 | 0.001 | 0.001 | 1.352 | $1.610 \times 10^3$ |
| 3.00 GeV | $3.104 \times 10^3$ | 1.410 | 0.008 | 0.003 | 0.001 | 1.422 | $2.329 \times 10^3$ |
| 4.00 GeV | $4.104 \times 10^3$ | 1.454 | 0.011 | 0.006 | 0.002 | 1.473 | $3.020 \times 10^3$ |
| 8.00 GeV | $8.105 \times 10^3$ | 1.553 | 0.028 | 0.023 | 0.003 | 1.608 | $5.607 \times 10^3$ |
| 10.0 GeV | $1.011 \times 10^4$ | 1.583 | 0.038 | 0.033 | 0.004 | 1.658 | $6.831 \times 10^3$ |
| 14.0 GeV | $1.411 \times 10^4$ | 1.626 | 0.057 | 0.055 | 0.005 | 1.744 | $9.182 \times 10^3$ |
| 20.0 GeV | $2.011 \times 10^4$ | 1.668 | 0.089 | 0.091 | 0.007 | 1.856 | $1.251 \times 10^4$ |
| 30.0 GeV | $3.011 \times 10^4$ | 1.713 | 0.146 | 0.161 | 0.011 | 2.032 | $1.766 \times 10^4$ |
| 40.0 GeV | $4.011 \times 10^4$ | 1.743 | 0.207 | 0.238 | 0.014 | 2.203 | $2.238 \times 10^4$ |
| 80.0 GeV | $8.011 \times 10^4$ | 1.808 | 0.468 | 0.579 | 0.027 | 2.884 | $3.821 \times 10^4$ |
| 100. GeV | $1.001 \times 10^5$ | 1.828 | 0.606 | 0.764 | 0.034 | 3.233 | $4.476 \times 10^4$ |
| 127. GeV | $1.266 \times 10^5$ | 1.848 | 0.792 | 1.013 | 0.043 | 3.698 | *Muon critical energy* |
| 140. GeV | $1.401 \times 10^5$ | 1.856 | 0.889 | 1.143 | 0.047 | 3.938 | $5.596 \times 10^4$ |
| 200. GeV | $2.001 \times 10^5$ | 1.886 | 1.332 | 1.745 | 0.067 | 5.032 | $6.941 \times 10^4$ |
| 300. GeV | $3.001 \times 10^5$ | 1.918 | 2.088 | 2.750 | 0.101 | 6.859 | $8.638 \times 10^4$ |
| 400. GeV | $4.001 \times 10^5$ | 1.941 | 2.869 | 3.791 | 0.134 | 8.737 | $9.927 \times 10^4$ |
| 800. GeV | $8.001 \times 10^5$ | 1.997 | 6.089 | 8.059 | 0.272 | 16.419 | $1.322 \times 10^5$ |
| 1.00 TeV | $1.000 \times 10^6$ | 2.015 | 7.741 | 10.243 | 0.341 | 20.343 | $1.431 \times 10^5$ |
| 1.40 TeV | $1.400 \times 10^6$ | 2.043 | 11.051 | 14.596 | 0.483 | 28.175 | $1.597 \times 10^5$ |
| 2.00 TeV | $2.000 \times 10^6$ | 2.073 | 16.109 | 21.239 | 0.699 | 40.122 | $1.775 \times 10^5$ |
| 3.00 TeV | $3.000 \times 10^6$ | 2.107 | 24.547 | 32.275 | 1.068 | 60.000 | $1.977 \times 10^5$ |
| 4.00 TeV | $4.000 \times 10^6$ | 2.132 | 33.092 | 43.428 | 1.443 | 80.097 | $2.121 \times 10^5$ |
| 8.00 TeV | $8.000 \times 10^6$ | 2.192 | 67.519 | 88.252 | 2.995 | 160.961 | $2.466 \times 10^5$ |
| 10.0 TeV | $1.000 \times 10^7$ | 2.212 | 84.857 | 110.780 | 3.792 | 201.643 | $2.577 \times 10^5$ |
| 14.0 TeV | $1.400 \times 10^7$ | 2.243 | 119.437 | 155.733 | 5.426 | 282.841 | $2.744 \times 10^5$ |
| 20.0 TeV | $2.000 \times 10^7$ | 2.276 | 171.590 | 223.446 | 7.928 | 405.242 | $2.920 \times 10^5$ |
| 30.0 TeV | $3.000 \times 10^7$ | 2.313 | 258.497 | 336.096 | 12.248 | 609.156 | $3.120 \times 10^5$ |
| 40.0 TeV | $4.000 \times 10^7$ | 2.341 | 345.716 | 449.004 | 16.667 | 813.729 | $3.262 \times 10^5$ |
| 80.0 TeV | $8.000 \times 10^7$ | 2.408 | 694.567 | 900.941 | 35.104 | 1633.022 | $3.602 \times 10^5$ |
| 100. TeV | $1.000 \times 10^8$ | 2.430 | 869.100 | 1127.110 | 44.620 | 2043.262 | $3.711 \times 10^5$ |