## Muons in adenine ($C_5H_5N_5$)

| $\langle Z/A \rangle$ | $\rho$ [g/cm$^3$] | $I$ [eV] | $a$ | $k = m_s$ | $x_0$ | $x_1$ | $\overline{C}$ | $\delta_0$ |
|---|---|---|---|---|---|---|---|---|
| 0.51903 | 1.350 | 71.4 | 0.20908 | 3.0271 | 0.1295 | 2.4219 | 3.1724 | 0.00 |

| $T$ | $p$ [MeV/$c$] | Ionization | Brems | Pair prod | Photonucl | Total | CSDA range [g/cm$^2$] |
|---|---|---|---|---|---|---|---|
| | | [MeV cm$^2$/g] | | | | | |
| 10.0 MeV | $4.704 \times 10^1$ | 7.495 | | | | 7.495 | $7.371 \times 10^{-1}$ |
| 14.0 MeV | $5.616 \times 10^1$ | 5.845 | | | | 5.845 | $1.348 \times 10^0$ |
| 20.0 MeV | $6.802 \times 10^1$ | 4.564 | | | | 4.564 | $2.523 \times 10^0$ |
| 30.0 MeV | $8.509 \times 10^1$ | 3.540 | | | | 3.540 | $5.046 \times 10^0$ |
| 40.0 MeV | $1.003 \times 10^2$ | 3.022 | | | | 3.022 | $8.123 \times 10^0$ |
| 80.0 MeV | $1.527 \times 10^2$ | 2.264 | | | | 2.264 | $2.389 \times 10^1$ |
| 100. MeV | $1.764 \times 10^2$ | 2.119 | | | | 2.120 | $3.305 \times 10^1$ |
| 140. MeV | $2.218 \times 10^2$ | 1.972 | | | | 1.972 | $5.271 \times 10^1$ |
| 200. MeV | $2.868 \times 10^2$ | 1.887 | | | | 1.887 | $8.393 \times 10^1$ |
| 300. MeV | $3.917 \times 10^2$ | 1.854 | | | 0.000 | 1.855 | $1.375 \times 10^2$ |
| 318. MeV | $4.105 \times 10^2$ | 1.854 | | | 0.000 | 1.854 | *Minimum ionization* |
| 400. MeV | $4.945 \times 10^2$ | 1.860 | | | 0.000 | 1.860 | $1.914 \times 10^2$ |
| 800. MeV | $8.995 \times 10^2$ | 1.929 | 0.000 | | 0.000 | 1.930 | $4.027 \times 10^2$ |
| 1.00 GeV | $1.101 \times 10^3$ | 1.961 | 0.000 | | 0.000 | 1.962 | $5.055 \times 10^2$ |
| 1.40 GeV | $1.502 \times 10^3$ | 2.013 | 0.000 | | 0.001 | 2.014 | $7.066 \times 10^2$ |
| 2.00 GeV | $2.103 \times 10^3$ | 2.070 | 0.001 | 0.000 | 0.001 | 2.072 | $1.000 \times 10^3$ |
| 3.00 GeV | $3.104 \times 10^3$ | 2.135 | 0.001 | 0.001 | 0.001 | 2.138 | $1.475 \times 10^3$ |
| 4.00 GeV | $4.104 \times 10^3$ | 2.180 | 0.001 | 0.001 | 0.002 | 2.184 | $1.937 \times 10^3$ |
| 8.00 GeV | $8.105 \times 10^3$ | 2.283 | 0.003 | 0.003 | 0.004 | 2.293 | $3.719 \times 10^3$ |
| 10.0 GeV | $1.011 \times 10^4$ | 2.314 | 0.004 | 0.004 | 0.005 | 2.328 | $4.584 \times 10^3$ |
| 14.0 GeV | $1.411 \times 10^4$ | 2.360 | 0.006 | 0.007 | 0.007 | 2.380 | $6.283 \times 10^3$ |
| 20.0 GeV | $2.011 \times 10^4$ | 2.406 | 0.010 | 0.011 | 0.009 | 2.436 | $8.773 \times 10^3$ |
| 30.0 GeV | $3.011 \times 10^4$ | 2.455 | 0.016 | 0.020 | 0.013 | 2.505 | $1.282 \times 10^4$ |
| 40.0 GeV | $4.011 \times 10^4$ | 2.489 | 0.023 | 0.029 | 0.018 | 2.560 | $1.676 \times 10^4$ |
| 80.0 GeV | $8.011 \times 10^4$ | 2.568 | 0.053 | 0.071 | 0.034 | 2.727 | $3.188 \times 10^4$ |
| 100. GeV | $1.001 \times 10^5$ | 2.592 | 0.069 | 0.094 | 0.042 | 2.798 | $3.912 \times 10^4$ |
| 140. GeV | $1.401 \times 10^5$ | 2.628 | 0.102 | 0.142 | 0.059 | 2.931 | $5.308 \times 10^4$ |
| 200. GeV | $2.001 \times 10^5$ | 2.666 | 0.154 | 0.217 | 0.084 | 3.121 | $7.291 \times 10^4$ |
| 300. GeV | $3.001 \times 10^5$ | 2.709 | 0.242 | 0.345 | 0.125 | 3.422 | $1.035 \times 10^5$ |
| 400. GeV | $4.001 \times 10^5$ | 2.740 | 0.335 | 0.479 | 0.167 | 3.720 | $1.315 \times 10^5$ |
| 800. GeV | $8.001 \times 10^5$ | 2.814 | 0.719 | 1.035 | 0.338 | 4.905 | $2.248 \times 10^5$ |
| 1.00 TeV | $1.000 \times 10^6$ | 2.838 | 0.917 | 1.322 | 0.424 | 5.502 | $2.633 \times 10^5$ |
| 1.06 TeV | $1.064 \times 10^6$ | 2.845 | 0.980 | 1.413 | 0.452 | 5.691 | *Muon critical energy* |
| 1.40 TeV | $1.400 \times 10^6$ | 2.875 | 1.317 | 1.895 | 0.602 | 6.689 | $3.292 \times 10^5$ |
| 2.00 TeV | $2.000 \times 10^6$ | 2.915 | 1.931 | 2.772 | 0.871 | 8.490 | $4.086 \times 10^5$ |
| 3.00 TeV | $3.000 \times 10^6$ | 2.960 | 2.961 | 4.233 | 1.335 | 11.490 | $5.095 \times 10^5$ |
| 4.00 TeV | $4.000 \times 10^6$ | 2.993 | 4.009 | 5.715 | 1.806 | 14.524 | $5.868 \times 10^5$ |
| 8.00 TeV | $8.000 \times 10^6$ | 3.073 | 8.254 | 11.683 | 3.771 | 26.781 | $7.865 \times 10^5$ |
| 10.0 TeV | $1.000 \times 10^7$ | 3.100 | 10.400 | 14.690 | 4.783 | 32.973 | $8.537 \times 10^5$ |
| 14.0 TeV | $1.400 \times 10^7$ | 3.140 | 14.683 | 20.680 | 6.867 | 45.371 | $9.567 \times 10^5$ |
| 20.0 TeV | $2.000 \times 10^7$ | 3.184 | 21.163 | 29.715 | 10.071 | 64.133 | $1.067 \times 10^6$ |
| 30.0 TeV | $3.000 \times 10^7$ | 3.234 | 31.952 | 44.748 | 15.632 | 95.566 | $1.194 \times 10^6$ |
| 40.0 TeV | $4.000 \times 10^7$ | 3.270 | 42.798 | 59.831 | 21.340 | 127.240 | $1.285 \times 10^6$ |
| 80.0 TeV | $8.000 \times 10^7$ | 3.360 | 86.287 | 120.213 | 45.297 | 255.156 | $1.502 \times 10^6$ |
| 100. TeV | $1.000 \times 10^8$ | 3.389 | 108.087 | 150.440 | 57.716 | 319.633 | $1.572 \times 10^6$ |