## Muons in n-pentane ($C_5H_{12}$)

| $\langle Z/A \rangle$ | $\rho$ [g/cm$^3$] | $I$ [eV] | $a$ | $k = m_s$ | $x_0$ | $x_1$ | $\overline{C}$ | $\delta_0$ |
|---|---|---|---|---|---|---|---|---|
| 0.58212 | 0.626 | 53.6 | 0.10809 | 3.5265 | 0.2086 | 2.5855 | 3.2504 | 0.00 |

| $T$ | $p$ [MeV/$c$] | Ionization | Brems | Pair prod | Photonucl | Total | CSDA range [g/cm$^2$] |
|---|---|---|---|---|---|---|---|
| | | [MeV cm$^2$/g] | | | | | |
| 10.0 MeV | $4.704 \times 10^1$ | 8.716 | | | | 8.716 | $6.322 \times 10^{-1}$ |
| 14.0 MeV | $5.616 \times 10^1$ | 6.788 | | | | 6.788 | $1.158 \times 10^0$ |
| 20.0 MeV | $6.802 \times 10^1$ | 5.293 | | | | 5.293 | $2.170 \times 10^0$ |
| 30.0 MeV | $8.509 \times 10^1$ | 4.100 | | | | 4.100 | $4.347 \times 10^0$ |
| 40.0 MeV | $1.003 \times 10^2$ | 3.498 | | | | 3.498 | $7.005 \times 10^0$ |
| 80.0 MeV | $1.527 \times 10^2$ | 2.620 | | | | 2.620 | $2.064 \times 10^1$ |
| 100. MeV | $1.764 \times 10^2$ | 2.460 | | | | 2.460 | $2.854 \times 10^1$ |
| 140. MeV | $2.218 \times 10^2$ | 2.289 | | | | 2.289 | $4.548 \times 10^1$ |
| 200. MeV | $2.868 \times 10^2$ | 2.189 | | | | 2.189 | $7.239 \times 10^1$ |
| 300. MeV | $3.917 \times 10^2$ | 2.149 | | | 0.000 | 2.149 | $1.186 \times 10^2$ |
| 328. MeV | $4.201 \times 10^2$ | 2.148 | | | 0.000 | 2.148 | *Minimum ionization* |
| 400. MeV | $4.945 \times 10^2$ | 2.153 | | | 0.000 | 2.153 | $1.652 \times 10^2$ |
| 800. MeV | $8.995 \times 10^2$ | 2.228 | 0.000 | | 0.000 | 2.229 | $3.478 \times 10^2$ |
| 1.00 GeV | $1.101 \times 10^3$ | 2.263 | 0.000 | | 0.000 | 2.264 | $4.369 \times 10^2$ |
| 1.40 GeV | $1.502 \times 10^3$ | 2.320 | 0.000 | | 0.001 | 2.321 | $6.113 \times 10^2$ |
| 2.00 GeV | $2.103 \times 10^3$ | 2.383 | 0.000 | 0.000 | 0.001 | 2.385 | $8.661 \times 10^2$ |
| 3.00 GeV | $3.104 \times 10^3$ | 2.455 | 0.001 | 0.000 | 0.001 | 2.457 | $1.279 \times 10^3$ |
| 4.00 GeV | $4.104 \times 10^3$ | 2.504 | 0.001 | 0.001 | 0.002 | 2.508 | $1.681 \times 10^3$ |
| 8.00 GeV | $8.105 \times 10^3$ | 2.619 | 0.003 | 0.003 | 0.004 | 2.628 | $3.235 \times 10^3$ |
| 10.0 GeV | $1.011 \times 10^4$ | 2.654 | 0.004 | 0.004 | 0.005 | 2.666 | $3.990 \times 10^3$ |
| 14.0 GeV | $1.411 \times 10^4$ | 2.705 | 0.006 | 0.006 | 0.007 | 2.723 | $5.473 \times 10^3$ |
| 20.0 GeV | $2.011 \times 10^4$ | 2.756 | 0.009 | 0.010 | 0.009 | 2.784 | $7.651 \times 10^3$ |
| 30.0 GeV | $3.011 \times 10^4$ | 2.812 | 0.014 | 0.017 | 0.014 | 2.858 | $1.119 \times 10^4$ |
| 40.0 GeV | $4.011 \times 10^4$ | 2.850 | 0.020 | 0.026 | 0.018 | 2.914 | $1.466 \times 10^4$ |
| 80.0 GeV | $8.011 \times 10^4$ | 2.938 | 0.047 | 0.063 | 0.035 | 3.082 | $2.798 \times 10^4$ |
| 100. GeV | $1.001 \times 10^5$ | 2.965 | 0.061 | 0.083 | 0.043 | 3.152 | $3.440 \times 10^4$ |
| 140. GeV | $1.401 \times 10^5$ | 3.006 | 0.090 | 0.124 | 0.060 | 3.280 | $4.683 \times 10^4$ |
| 200. GeV | $2.001 \times 10^5$ | 3.049 | 0.135 | 0.191 | 0.085 | 3.460 | $6.463 \times 10^4$ |
| 300. GeV | $3.001 \times 10^5$ | 3.097 | 0.214 | 0.304 | 0.128 | 3.743 | $9.241 \times 10^4$ |
| 400. GeV | $4.001 \times 10^5$ | 3.131 | 0.296 | 0.422 | 0.170 | 4.020 | $1.182 \times 10^5$ |
| 800. GeV | $8.001 \times 10^5$ | 3.215 | 0.638 | 0.916 | 0.343 | 5.112 | $2.062 \times 10^5$ |
| 1.00 TeV | $1.000 \times 10^6$ | 3.242 | 0.814 | 1.171 | 0.431 | 5.659 | $2.434 \times 10^5$ |
| 1.33 TeV | $1.329 \times 10^6$ | 3.277 | 1.107 | 1.589 | 0.580 | 6.553 | *Muon critical energy* |
| 1.40 TeV | $1.400 \times 10^6$ | 3.283 | 1.171 | 1.680 | 0.612 | 6.747 | $3.080 \times 10^5$ |
| 2.00 TeV | $2.000 \times 10^6$ | 3.327 | 1.720 | 2.462 | 0.886 | 8.396 | $3.876 \times 10^5$ |
| 3.00 TeV | $3.000 \times 10^6$ | 3.378 | 2.642 | 3.762 | 1.359 | 11.141 | $4.907 \times 10^5$ |
| 4.00 TeV | $4.000 \times 10^6$ | 3.415 | 3.581 | 5.083 | 1.839 | 13.918 | $5.708 \times 10^5$ |
| 8.00 TeV | $8.000 \times 10^6$ | 3.505 | 7.388 | 10.405 | 3.841 | 25.139 | $7.817 \times 10^5$ |
| 10.0 TeV | $1.000 \times 10^7$ | 3.535 | 9.316 | 13.086 | 4.873 | 30.811 | $8.534 \times 10^5$ |
| 14.0 TeV | $1.400 \times 10^7$ | 3.580 | 13.165 | 18.428 | 7.000 | 42.174 | $9.640 \times 10^5$ |
| 20.0 TeV | $2.000 \times 10^7$ | 3.629 | 18.993 | 26.487 | 10.270 | 59.380 | $1.083 \times 10^6$ |
| 30.0 TeV | $3.000 \times 10^7$ | 3.686 | 28.699 | 39.893 | 15.951 | 88.230 | $1.221 \times 10^6$ |
| 40.0 TeV | $4.000 \times 10^7$ | 3.726 | 38.464 | 53.345 | 21.784 | 117.320 | $1.319 \times 10^6$ |
| 80.0 TeV | $8.000 \times 10^7$ | 3.827 | 77.618 | 107.201 | 46.292 | 234.937 | $1.555 \times 10^6$ |
| 100. TeV | $1.000 \times 10^8$ | 3.860 | 97.249 | 134.162 | 59.006 | 294.276 | $1.631 \times 10^6$ |