## Table 053: Muons in Iodine

| Z | $A$ [g/mol] | $\rho$ [g/cm$^3$] | $I$ [eV] | $a$ | $k = m_s$ | $x_0$ | $x_1$ | $\overline{C}$ | $\delta_0$ |
|---|---|---|---|---|---|---|---|---|---|
| 53 (I) | 126.90447 (3) | 4.930 | 491.0 | 0.23766 | 2.7276 | 0.0549 | 3.2596 | 5.9488 | 0.00 |

| $T$ | $p$ [MeV/$c$] | Ionization | Brems | Pair prod | Photonucl | Total | CSDA range [g/cm$^2$] |
|---|---|---|---|---|---|---|---|
| | | [MeV cm$^2$/g] | | | | | |
| 10.0 MeV | $4.704 \times 10^1$ | 4.499 | | | | 4.499 | $1.267 \times 10^0$ |
| 14.0 MeV | $5.616 \times 10^1$ | 3.561 | | | | 3.561 | $2.276 \times 10^0$ |
| 20.0 MeV | $6.802 \times 10^1$ | 2.818 | | | | 2.818 | $4.191 \times 10^0$ |
| 30.0 MeV | $8.509 \times 10^1$ | 2.214 | | | | 2.215 | $8.247 \times 10^0$ |
| 40.0 MeV | $1.003 \times 10^2$ | 1.907 | | | | 1.907 | $1.314 \times 10^1$ |
| 80.0 MeV | $1.527 \times 10^2$ | 1.459 | | | | 1.459 | $3.785 \times 10^1$ |
| 100. MeV | $1.764 \times 10^2$ | 1.380 | | | | 1.380 | $5.197 \times 10^1$ |
| 140. MeV | $2.218 \times 10^2$ | 1.304 | | | | 1.304 | $8.192 \times 10^1$ |
| 200. MeV | $2.868 \times 10^2$ | 1.267 | | | | 1.268 | $1.288 \times 10^2$ |
| 242. MeV | $3.316 \times 10^2$ | 1.263 | | | | 1.263 | *Minimum ionization* |
| 300. MeV | $3.917 \times 10^2$ | 1.268 | 0.000 | | 0.000 | 1.268 | $2.078 \times 10^2$ |
| 400. MeV | $4.945 \times 10^2$ | 1.287 | 0.000 | | 0.000 | 1.287 | $2.861 \times 10^2$ |
| 800. MeV | $8.995 \times 10^2$ | 1.372 | 0.001 | | 0.000 | 1.374 | $5.866 \times 10^2$ |
| 1.00 GeV | $1.101 \times 10^3$ | 1.407 | 0.001 | | 0.000 | 1.408 | $7.303 \times 10^2$ |
| 1.40 GeV | $1.502 \times 10^3$ | 1.461 | 0.002 | 0.000 | 0.001 | 1.463 | $1.009 \times 10^3$ |
| 2.00 GeV | $2.103 \times 10^3$ | 1.519 | 0.003 | 0.001 | 0.001 | 1.524 | $1.410 \times 10^3$ |
| 3.00 GeV | $3.104 \times 10^3$ | 1.585 | 0.005 | 0.003 | 0.001 | 1.595 | $2.050 \times 10^3$ |
| 4.00 GeV | $4.104 \times 10^3$ | 1.631 | 0.007 | 0.005 | 0.002 | 1.645 | $2.667 \times 10^3$ |
| 8.00 GeV | $8.105 \times 10^3$ | 1.734 | 0.018 | 0.017 | 0.003 | 1.772 | $5.000 \times 10^3$ |
| 10.0 GeV | $1.011 \times 10^4$ | 1.764 | 0.024 | 0.024 | 0.004 | 1.817 | $6.114 \times 10^3$ |
| 14.0 GeV | $1.411 \times 10^4$ | 1.808 | 0.036 | 0.039 | 0.005 | 1.890 | $8.272 \times 10^3$ |
| 20.0 GeV | $2.011 \times 10^4$ | 1.852 | 0.056 | 0.064 | 0.008 | 1.980 | $1.137 \times 10^4$ |
| 30.0 GeV | $3.011 \times 10^4$ | 1.898 | 0.092 | 0.112 | 0.011 | 2.113 | $1.626 \times 10^4$ |
| 40.0 GeV | $4.011 \times 10^4$ | 1.928 | 0.130 | 0.164 | 0.015 | 2.237 | $2.085 \times 10^4$ |
| 80.0 GeV | $8.011 \times 10^4$ | 1.996 | 0.293 | 0.393 | 0.029 | 2.711 | $3.706 \times 10^4$ |
| 100. GeV | $1.001 \times 10^5$ | 2.016 | 0.379 | 0.516 | 0.036 | 2.948 | $4.414 \times 10^4$ |
| 140. GeV | $1.401 \times 10^5$ | 2.046 | 0.557 | 0.770 | 0.050 | 3.424 | $5.672 \times 10^4$ |
| 200. GeV | $2.000 \times 10^5$ | 2.076 | 0.834 | 1.171 | 0.071 | 4.154 | *Muon critical energy* |
| 200. GeV | $2.001 \times 10^5$ | 2.076 | 0.835 | 1.172 | 0.071 | 4.155 | $7.261 \times 10^4$ |
| 300. GeV | $3.001 \times 10^5$ | 2.111 | 1.309 | 1.845 | 0.107 | 5.373 | $9.373 \times 10^4$ |
| 400. GeV | $4.001 \times 10^5$ | 2.136 | 1.799 | 2.541 | 0.142 | 6.620 | $1.105 \times 10^5$ |
| 800. GeV | $8.001 \times 10^5$ | 2.195 | 3.824 | 5.398 | 0.288 | 11.707 | $1.553 \times 10^5$ |
| 1.00 TeV | $1.000 \times 10^6$ | 2.215 | 4.865 | 6.860 | 0.362 | 14.302 | $1.708 \times 10^5$ |
| 1.40 TeV | $1.400 \times 10^6$ | 2.244 | 6.950 | 9.775 | 0.512 | 19.483 | $1.946 \times 10^5$ |
| 2.00 TeV | $2.000 \times 10^6$ | 2.276 | 10.140 | 14.224 | 0.741 | 27.382 | $2.205 \times 10^5$ |
| 3.00 TeV | $3.000 \times 10^6$ | 2.313 | 15.466 | 21.617 | 1.133 | 40.530 | $2.503 \times 10^5$ |
| 4.00 TeV | $4.000 \times 10^6$ | 2.339 | 20.863 | 29.089 | 1.531 | 53.823 | $2.717 \times 10^5$ |
| 8.00 TeV | $8.000 \times 10^6$ | 2.404 | 42.622 | 59.124 | 3.181 | 107.332 | $3.233 \times 10^5$ |
| 10.0 TeV | $1.000 \times 10^7$ | 2.425 | 53.587 | 74.222 | 4.028 | 134.264 | $3.399 \times 10^5$ |
| 14.0 TeV | $1.400 \times 10^7$ | 2.458 | 75.458 | 104.347 | 5.767 | 188.031 | $3.650 \times 10^5$ |
| 20.0 TeV | $2.000 \times 10^7$ | 2.493 | 108.458 | 149.728 | 8.432 | 269.112 | $3.915 \times 10^5$ |
| 30.0 TeV | $3.000 \times 10^7$ | 2.533 | 163.396 | 225.232 | 13.036 | 404.198 | $4.216 \times 10^5$ |
| 40.0 TeV | $4.000 \times 10^7$ | 2.562 | 218.532 | 300.914 | 17.748 | 539.758 | $4.430 \times 10^5$ |
| 80.0 TeV | $8.000 \times 10^7$ | 2.634 | 439.406 | 603.853 | 37.415 | 1083.309 | $4.942 \times 10^5$ |
| 100. TeV | $1.000 \times 10^8$ | 2.658 | 550.030 | 755.460 | 47.570 | 1355.719 | $5.107 \times 10^5$ |