## Muons in lithium tetraborate $Li_2B_4O_7$

| $\langle Z/A \rangle$ | $\rho$ [g/cm$^3$] | $I$ [eV] | $a$ | $k = m_s$ | $x_0$ | $x_1$ | $\overline{C}$ | $\delta_0$ |
|---|---|---|---|---|---|---|---|---|
| 0.48487 | 2.440 | 94.6 | 0.11075 | 3.4389 | 0.0737 | 2.6502 | 3.2093 | 0.00 |

| $T$ | $p$ [MeV/$c$] | Ionization | Brems | Pair prod | Photonucl | Total | CSDA range [g/cm$^2$] |
|---|---|---|---|---|---|---|---|
| | | [MeV cm$^2$/g] | | | | | |
| 10.0 MeV | $4.704 \times 10^1$ | 6.748 | | | | 6.748 | $8.208 \times 10^{-1}$ |
| 14.0 MeV | $5.616 \times 10^1$ | 5.270 | | | | 5.270 | $1.499 \times 10^0$ |
| 20.0 MeV | $6.802 \times 10^1$ | 4.120 | | | | 4.120 | $2.801 \times 10^0$ |
| 30.0 MeV | $8.509 \times 10^1$ | 3.200 | | | | 3.200 | $5.593 \times 10^0$ |
| 40.0 MeV | $1.003 \times 10^2$ | 2.735 | | | | 2.735 | $8.995 \times 10^0$ |
| 80.0 MeV | $1.527 \times 10^2$ | 2.048 | | | | 2.048 | $2.642 \times 10^1$ |
| 100. MeV | $1.764 \times 10^2$ | 1.920 | | | | 1.920 | $3.653 \times 10^1$ |
| 140. MeV | $2.218 \times 10^2$ | 1.790 | | | | 1.790 | $5.821 \times 10^1$ |
| 200. MeV | $2.868 \times 10^2$ | 1.716 | | | | 1.716 | $9.258 \times 10^1$ |
| 300. MeV | $3.917 \times 10^2$ | 1.688 | | | 0.000 | 1.688 | $1.515 \times 10^2$ |
| 314. MeV | $4.065 \times 10^2$ | 1.688 | | | 0.000 | 1.688 | *Minimum ionization* |
| 400. MeV | $4.945 \times 10^2$ | 1.695 | | | 0.000 | 1.695 | $2.107 \times 10^2$ |
| 800. MeV | $8.995 \times 10^2$ | 1.761 | 0.000 | | 0.000 | 1.762 | $4.422 \times 10^2$ |
| 1.00 GeV | $1.101 \times 10^3$ | 1.791 | 0.000 | | 0.000 | 1.792 | $5.547 \times 10^2$ |
| 1.40 GeV | $1.502 \times 10^3$ | 1.840 | 0.000 | | 0.001 | 1.841 | $7.748 \times 10^2$ |
| 2.00 GeV | $2.103 \times 10^3$ | 1.893 | 0.001 | 0.000 | 0.001 | 1.895 | $1.096 \times 10^3$ |
| 3.00 GeV | $3.104 \times 10^3$ | 1.954 | 0.001 | 0.001 | 0.001 | 1.957 | $1.614 \times 10^3$ |
| 4.00 GeV | $4.104 \times 10^3$ | 1.996 | 0.001 | 0.001 | 0.002 | 2.001 | $2.120 \times 10^3$ |
| 8.00 GeV | $8.105 \times 10^3$ | 2.093 | 0.003 | 0.003 | 0.004 | 2.103 | $4.064 \times 10^3$ |
| 10.0 GeV | $1.011 \times 10^4$ | 2.122 | 0.004 | 0.004 | 0.005 | 2.136 | $5.007 \times 10^3$ |
| 14.0 GeV | $1.411 \times 10^4$ | 2.165 | 0.007 | 0.007 | 0.007 | 2.185 | $6.857 \times 10^3$ |
| 20.0 GeV | $2.011 \times 10^4$ | 2.208 | 0.010 | 0.012 | 0.009 | 2.239 | $9.568 \times 10^3$ |
| 30.0 GeV | $3.011 \times 10^4$ | 2.255 | 0.017 | 0.021 | 0.013 | 2.306 | $1.396 \times 10^4$ |
| 40.0 GeV | $4.011 \times 10^4$ | 2.286 | 0.024 | 0.030 | 0.018 | 2.359 | $1.825 \times 10^4$ |
| 80.0 GeV | $8.011 \times 10^4$ | 2.359 | 0.055 | 0.074 | 0.034 | 2.523 | $3.462 \times 10^4$ |
| 100. GeV | $1.001 \times 10^5$ | 2.382 | 0.071 | 0.098 | 0.042 | 2.593 | $4.244 \times 10^4$ |
| 140. GeV | $1.401 \times 10^5$ | 2.416 | 0.105 | 0.146 | 0.059 | 2.727 | $5.748 \times 10^4$ |
| 200. GeV | $2.001 \times 10^5$ | 2.452 | 0.158 | 0.224 | 0.083 | 2.917 | $7.874 \times 10^4$ |
| 300. GeV | $3.001 \times 10^5$ | 2.492 | 0.250 | 0.356 | 0.125 | 3.222 | $1.113 \times 10^5$ |
| 400. GeV | $4.001 \times 10^5$ | 2.521 | 0.344 | 0.493 | 0.166 | 3.525 | $1.410 \times 10^5$ |
| 800. GeV | $8.001 \times 10^5$ | 2.590 | 0.739 | 1.066 | 0.335 | 4.730 | $2.386 \times 10^5$ |
| 960. GeV | $9.603 \times 10^5$ | 2.608 | 0.902 | 1.302 | 0.404 | 5.217 | *Muon critical energy* |
| 1.00 TeV | $1.000 \times 10^6$ | 2.613 | 0.943 | 1.361 | 0.421 | 5.339 | $2.784 \times 10^5$ |
| 1.40 TeV | $1.400 \times 10^6$ | 2.647 | 1.353 | 1.950 | 0.598 | 6.548 | $3.459 \times 10^5$ |
| 2.00 TeV | $2.000 \times 10^6$ | 2.684 | 1.984 | 2.851 | 0.866 | 8.385 | $4.267 \times 10^5$ |
| 3.00 TeV | $3.000 \times 10^6$ | 2.726 | 3.040 | 4.352 | 1.326 | 11.445 | $5.284 \times 10^5$ |
| 4.00 TeV | $4.000 \times 10^6$ | 2.757 | 4.115 | 5.874 | 1.795 | 14.541 | $6.058 \times 10^5$ |
| 8.00 TeV | $8.000 \times 10^6$ | 2.832 | 8.464 | 12.004 | 3.746 | 27.047 | $8.044 \times 10^5$ |
| 10.0 TeV | $1.000 \times 10^7$ | 2.857 | 10.663 | 15.092 | 4.751 | 33.363 | $8.708 \times 10^5$ |
| 14.0 TeV | $1.400 \times 10^7$ | 2.895 | 15.050 | 21.243 | 6.821 | 46.010 | $9.725 \times 10^5$ |
| 20.0 TeV | $2.000 \times 10^7$ | 2.935 | 21.685 | 30.522 | 10.001 | 65.145 | $1.082 \times 10^6$ |
| 30.0 TeV | $3.000 \times 10^7$ | 2.982 | 32.732 | 45.961 | 15.520 | 97.197 | $1.206 \times 10^6$ |
| 40.0 TeV | $4.000 \times 10^7$ | 3.016 | 43.836 | 61.450 | 21.184 | 129.487 | $1.295 \times 10^6$ |
| 80.0 TeV | $8.000 \times 10^7$ | 3.100 | 88.359 | 123.458 | 44.947 | 259.863 | $1.509 \times 10^6$ |
| 100. TeV | $1.000 \times 10^8$ | 3.127 | 110.678 | 154.499 | 57.261 | 325.566 | $1.578 \times 10^6$ |