## Muons in borosilicate glass (Pyrex Corning 7740)

| $\langle Z/A \rangle$ | $\rho$ [g/cm$^3$] | $I$ [eV] | $a$ | $k = m_s$ | $x_0$ | $x_1$ | $\overline{C}$ | $\delta_0$ |
|---|---|---|---|---|---|---|---|---|
| 0.49707 | 2.230 | 134.0 | 0.08270 | 3.5224 | 0.1479 | 2.9933 | 3.9708 | 0.00 |

| $T$ | $p$ [MeV/$c$] | Ionization | Brems | Pair prod | Photonucl | Total | CSDA range [g/cm$^2$] |
|---|---|---|---|---|---|---|---|
| | | [MeV cm$^2$/g] | | | | | |
| 10.0 MeV | $4.704 \times 10^1$ | 6.597 | | | | 6.597 | $8.427 \times 10^{-1}$ |
| 14.0 MeV | $5.616 \times 10^1$ | 5.161 | | | | 5.162 | $1.535 \times 10^0$ |
| 20.0 MeV | $6.802 \times 10^1$ | 4.043 | | | | 4.043 | $2.864 \times 10^0$ |
| 30.0 MeV | $8.509 \times 10^1$ | 3.146 | | | | 3.146 | $5.707 \times 10^0$ |
| 40.0 MeV | $1.003 \times 10^2$ | 2.691 | | | | 2.691 | $9.166 \times 10^0$ |
| 80.0 MeV | $1.527 \times 10^2$ | 2.029 | | | | 2.029 | $2.682 \times 10^1$ |
| 100. MeV | $1.764 \times 10^2$ | 1.907 | | | | 1.907 | $3.701 \times 10^1$ |
| 140. MeV | $2.218 \times 10^2$ | 1.784 | | | | 1.784 | $5.880 \times 10^1$ |
| 200. MeV | $2.868 \times 10^2$ | 1.716 | | | | 1.716 | $9.321 \times 10^1$ |
| 294. MeV | $3.854 \times 10^2$ | 1.696 | | | 0.000 | 1.696 | *Minimum ionization* |
| 300. MeV | $3.917 \times 10^2$ | 1.696 | | | 0.000 | 1.696 | $1.520 \times 10^2$ |
| 400. MeV | $4.945 \times 10^2$ | 1.707 | | | 0.000 | 1.707 | $2.108 \times 10^2$ |
| 800. MeV | $8.995 \times 10^2$ | 1.784 | 0.000 | | 0.000 | 1.785 | $4.400 \times 10^2$ |
| 1.00 GeV | $1.101 \times 10^3$ | 1.817 | 0.000 | | 0.000 | 1.818 | $5.510 \times 10^2$ |
| 1.40 GeV | $1.502 \times 10^3$ | 1.871 | 0.000 | 0.000 | 0.001 | 1.872 | $7.676 \times 10^2$ |
| 2.00 GeV | $2.103 \times 10^3$ | 1.929 | 0.001 | 0.000 | 0.001 | 1.931 | $1.083 \times 10^3$ |
| 3.00 GeV | $3.104 \times 10^3$ | 1.995 | 0.001 | 0.001 | 0.001 | 1.999 | $1.591 \times 10^3$ |
| 4.00 GeV | $4.104 \times 10^3$ | 2.041 | 0.002 | 0.002 | 0.002 | 2.046 | $2.085 \times 10^3$ |
| 8.00 GeV | $8.105 \times 10^3$ | 2.145 | 0.005 | 0.005 | 0.004 | 2.158 | $3.982 \times 10^3$ |
| 10.0 GeV | $1.011 \times 10^4$ | 2.176 | 0.006 | 0.006 | 0.005 | 2.194 | $4.901 \times 10^3$ |
| 14.0 GeV | $1.411 \times 10^4$ | 2.221 | 0.010 | 0.011 | 0.006 | 2.248 | $6.701 \times 10^3$ |
| 20.0 GeV | $2.011 \times 10^4$ | 2.267 | 0.015 | 0.017 | 0.009 | 2.309 | $9.333 \times 10^3$ |
| 30.0 GeV | $3.011 \times 10^4$ | 2.316 | 0.025 | 0.030 | 0.013 | 2.384 | $1.359 \times 10^4$ |
| 40.0 GeV | $4.011 \times 10^4$ | 2.348 | 0.035 | 0.045 | 0.017 | 2.446 | $1.773 \times 10^4$ |
| 80.0 GeV | $8.011 \times 10^4$ | 2.424 | 0.080 | 0.108 | 0.033 | 2.645 | $3.343 \times 10^4$ |
| 100. GeV | $1.001 \times 10^5$ | 2.447 | 0.103 | 0.142 | 0.041 | 2.734 | $4.087 \times 10^4$ |
| 140. GeV | $1.401 \times 10^5$ | 2.482 | 0.152 | 0.212 | 0.057 | 2.904 | $5.506 \times 10^4$ |
| 200. GeV | $2.001 \times 10^5$ | 2.518 | 0.229 | 0.324 | 0.081 | 3.153 | $7.488 \times 10^4$ |
| 300. GeV | $3.001 \times 10^5$ | 2.560 | 0.360 | 0.514 | 0.122 | 3.557 | $1.047 \times 10^5$ |
| 400. GeV | $4.001 \times 10^5$ | 2.589 | 0.497 | 0.713 | 0.162 | 3.961 | $1.313 \times 10^5$ |
| 731. GeV | $7.311 \times 10^5$ | 2.651 | 0.963 | 1.388 | 0.299 | 5.302 | *Muon critical energy* |
| 800. GeV | $8.001 \times 10^5$ | 2.660 | 1.062 | 1.532 | 0.328 | 5.583 | $2.160 \times 10^5$ |
| 1.00 TeV | $1.000 \times 10^6$ | 2.683 | 1.354 | 1.953 | 0.413 | 6.404 | $2.494 \times 10^5$ |
| 1.40 TeV | $1.400 \times 10^6$ | 2.718 | 1.941 | 2.793 | 0.585 | 8.038 | $3.051 \times 10^5$ |
| 2.00 TeV | $2.000 \times 10^6$ | 2.756 | 2.842 | 4.079 | 0.847 | 10.524 | $3.701 \times 10^5$ |
| 3.00 TeV | $3.000 \times 10^6$ | 2.800 | 4.349 | 6.217 | 1.297 | 14.664 | $4.503 \times 10^5$ |
| 4.00 TeV | $4.000 \times 10^6$ | 2.831 | 5.881 | 8.384 | 1.755 | 18.851 | $5.103 \times 10^5$ |
| 8.00 TeV | $8.000 \times 10^6$ | 2.908 | 12.074 | 17.104 | 3.661 | 35.747 | $6.618 \times 10^5$ |
| 10.0 TeV | $1.000 \times 10^7$ | 2.934 | 15.202 | 21.493 | 4.642 | 44.271 | $7.120 \times 10^5$ |
| 14.0 TeV | $1.400 \times 10^7$ | 2.972 | 21.446 | 30.242 | 6.661 | 61.321 | $7.885 \times 10^5$ |
| 20.0 TeV | $2.000 \times 10^7$ | 3.014 | 30.884 | 43.433 | 9.761 | 87.092 | $8.702 \times 10^5$ |
| 30.0 TeV | $3.000 \times 10^7$ | 3.062 | 46.586 | 65.386 | 15.136 | 130.171 | $9.635 \times 10^5$ |
| 40.0 TeV | $4.000 \times 10^7$ | 3.097 | 62.361 | 87.405 | 20.650 | 173.513 | $1.030 \times 10^6$ |
| 80.0 TeV | $8.000 \times 10^7$ | 3.183 | 125.615 | 175.553 | 43.761 | 348.112 | $1.189 \times 10^6$ |
| 100. TeV | $1.000 \times 10^8$ | 3.211 | 157.323 | 219.676 | 55.730 | 435.941 | $1.241 \times 10^6$ |