

## Muons in moscovium (Mc)

| Z        | A [g/mol]           | $\rho$ [g/cm <sup>3</sup> ] | I [eV]   | a                                     | $k = m_s$ | $x_0$    | $x_1$                              | $\bar{C}$ | $\delta_0$ |
|----------|---------------------|-----------------------------|----------|---------------------------------------|-----------|----------|------------------------------------|-----------|------------|
| 115 (Mc) | [290.196 (6)]       | ??                          | 1199.0   | 0.28871                               | 3.0000    | 0.6960   | 3.0000                             | 6.7363    | 0.00       |
| T        | p<br>[MeV/c]        | Ionization                  | Brems    | Pair prod<br>[MeV cm <sup>2</sup> /g] | Photonucl | Total    | CSDA range<br>[g/cm <sup>2</sup> ] |           |            |
| 10.0 MeV | $4.704 \times 10^1$ | 3.475                       |          |                                       |           | 3.475    | $1.726 \times 10^0$                |           |            |
| 14.0 MeV | $5.616 \times 10^1$ | 2.815                       |          |                                       |           | 2.815    | $3.016 \times 10^0$                |           |            |
| 20.0 MeV | $6.802 \times 10^1$ | 2.270                       |          |                                       |           | 2.270    | $5.411 \times 10^0$                |           |            |
| 30.0 MeV | $8.509 \times 10^1$ | 1.814                       |          |                                       |           | 1.814    | $1.040 \times 10^1$                |           |            |
| 40.0 MeV | $1.003 \times 10^2$ | 1.576                       |          |                                       |           | 1.576    | $1.635 \times 10^1$                |           |            |
| 80.0 MeV | $1.527 \times 10^2$ | 1.227                       |          |                                       |           | 1.227    | $4.592 \times 10^1$                |           |            |
| 100. MeV | $1.764 \times 10^2$ | 1.167                       |          |                                       |           | 1.167    | $6.268 \times 10^1$                |           |            |
| 140. MeV | $2.218 \times 10^2$ | 1.112                       |          |                                       |           | 1.112    | $9.795 \times 10^1$                |           |            |
| 200. MeV | $2.868 \times 10^2$ | 1.092                       | 0.000    |                                       |           | 1.092    | $1.526 \times 10^2$                |           |            |
| 206. MeV | $2.933 \times 10^2$ | 1.092                       | 0.000    |                                       |           | 1.092    | <i>Minimum ionization</i>          |           |            |
| 300. MeV | $3.917 \times 10^2$ | 1.107                       | 0.000    |                                       | 0.000     | 1.107    | $2.437 \times 10^2$                |           |            |
| 400. MeV | $4.945 \times 10^2$ | 1.135                       | 0.000    |                                       | 0.000     | 1.136    | $3.329 \times 10^2$                |           |            |
| 800. MeV | $8.995 \times 10^2$ | 1.238                       | 0.001    |                                       | 0.000     | 1.240    | $6.688 \times 10^2$                |           |            |
| 1.00 GeV | $1.101 \times 10^3$ | 1.276                       | 0.002    |                                       | 0.000     | 1.279    | $8.275 \times 10^2$                |           |            |
| 1.40 GeV | $1.502 \times 10^3$ | 1.334                       | 0.003    |                                       | 0.000     | 1.338    | $1.133 \times 10^3$                |           |            |
| 2.00 GeV | $2.103 \times 10^3$ | 1.395                       | 0.005    | 0.000                                 | 0.001     | 1.401    | $1.571 \times 10^3$                |           |            |
| 3.00 GeV | $3.104 \times 10^3$ | 1.461                       | 0.009    | 0.003                                 | 0.001     | 1.475    | $2.265 \times 10^3$                |           |            |
| 4.00 GeV | $4.104 \times 10^3$ | 1.506                       | 0.014    | 0.006                                 | 0.001     | 1.529    | $2.930 \times 10^3$                |           |            |
| 8.00 GeV | $8.105 \times 10^3$ | 1.605                       | 0.034    | 0.025                                 | 0.003     | 1.669    | $5.425 \times 10^3$                |           |            |
| 10.0 GeV | $1.011 \times 10^4$ | 1.634                       | 0.046    | 0.037                                 | 0.004     | 1.721    | $6.604 \times 10^3$                |           |            |
| 14.0 GeV | $1.411 \times 10^4$ | 1.675                       | 0.070    | 0.061                                 | 0.005     | 1.813    | $8.867 \times 10^3$                |           |            |
| 20.0 GeV | $2.011 \times 10^4$ | 1.716                       | 0.109    | 0.103                                 | 0.007     | 1.935    | $1.207 \times 10^4$                |           |            |
| 30.0 GeV | $3.011 \times 10^4$ | 1.757                       | 0.178    | 0.184                                 | 0.010     | 2.132    | $1.699 \times 10^4$                |           |            |
| 40.0 GeV | $4.011 \times 10^4$ | 1.785                       | 0.252    | 0.274                                 | 0.014     | 2.326    | $2.148 \times 10^4$                |           |            |
| 80.0 GeV | $8.011 \times 10^4$ | 1.847                       | 0.570    | 0.673                                 | 0.027     | 3.119    | $3.629 \times 10^4$                |           |            |
| 100. GeV | $1.001 \times 10^5$ | 1.865                       | 0.739    | 0.889                                 | 0.033     | 3.529    | $4.231 \times 10^4$                |           |            |
| 111. GeV | $1.109 \times 10^5$ | 1.874                       | 0.831    | 1.007                                 | 0.037     | 3.750    | <i>Muon critical energy</i>        |           |            |
| 140. GeV | $1.401 \times 10^5$ | 1.893                       | 1.084    | 1.334                                 | 0.047     | 4.360    | $5.250 \times 10^4$                |           |            |
| 200. GeV | $2.001 \times 10^5$ | 1.923                       | 1.625    | 2.040                                 | 0.066     | 5.656    | $6.456 \times 10^4$                |           |            |
| 300. GeV | $3.001 \times 10^5$ | 1.956                       | 2.546    | 3.219                                 | 0.099     | 7.822    | $7.954 \times 10^4$                |           |            |
| 400. GeV | $4.001 \times 10^5$ | 1.979                       | 3.497    | 4.441                                 | 0.132     | 10.052   | $9.079 \times 10^4$                |           |            |
| 800. GeV | $8.001 \times 10^5$ | 2.036                       | 7.418    | 9.454                                 | 0.267     | 19.178   | $1.191 \times 10^5$                |           |            |
| 1.00 TeV | $1.000 \times 10^6$ | 2.055                       | 9.430    | 12.019                                | 0.336     | 23.842   | $1.285 \times 10^5$                |           |            |
| 1.40 TeV | $1.400 \times 10^6$ | 2.083                       | 13.457   | 17.131                                | 0.476     | 33.149   | $1.426 \times 10^5$                |           |            |
| 2.00 TeV | $2.000 \times 10^6$ | 2.114                       | 19.611   | 24.934                                | 0.688     | 47.349   | $1.577 \times 10^5$                |           |            |
| 3.00 TeV | $3.000 \times 10^6$ | 2.149                       | 29.875   | 37.897                                | 1.051     | 70.974   | $1.749 \times 10^5$                |           |            |
| 4.00 TeV | $4.000 \times 10^6$ | 2.174                       | 40.266   | 50.998                                | 1.420     | 94.860   | $1.870 \times 10^5$                |           |            |
| 8.00 TeV | $8.000 \times 10^6$ | 2.236                       | 82.121   | 103.652                               | 2.947     | 190.958  | $2.161 \times 10^5$                |           |            |
| 10.0 TeV | $1.000 \times 10^7$ | 2.256                       | 103.195  | 130.116                               | 3.730     | 239.299  | $2.255 \times 10^5$                |           |            |
| 14.0 TeV | $1.400 \times 10^7$ | 2.287                       | 145.228  | 182.922                               | 5.336     | 335.776  | $2.395 \times 10^5$                |           |            |
| 20.0 TeV | $2.000 \times 10^7$ | 2.320                       | 208.612  | 262.468                               | 7.796     | 481.199  | $2.544 \times 10^5$                |           |            |
| 30.0 TeV | $3.000 \times 10^7$ | 2.359                       | 314.232  | 394.792                               | 12.043    | 723.429  | $2.712 \times 10^5$                |           |            |
| 40.0 TeV | $4.000 \times 10^7$ | 2.387                       | 420.220  | 527.420                               | 16.388    | 966.417  | $2.831 \times 10^5$                |           |            |
| 80.0 TeV | $8.000 \times 10^7$ | 2.456                       | 844.120  | 1058.295                              | 34.514    | 1939.388 | $3.117 \times 10^5$                |           |            |
| 100. TeV | $1.000 \times 10^8$ | 2.479                       | 1056.190 | 1323.970                              | 43.870    | 2426.511 | $3.209 \times 10^5$                |           |            |