

## Muons in tungsten hexafluoride (WF<sub>6</sub>)

|          | $\langle Z/A \rangle$ | $\rho$ [g/cm <sup>3</sup> ] | $I$ [eV] | $a$                      | $k = m_s$ | $x_0$    | $x_1$                              | $\bar{C}$ | $\delta_0$                  |
|----------|-----------------------|-----------------------------|----------|--------------------------|-----------|----------|------------------------------------|-----------|-----------------------------|
|          | 0.42976               | 2.400                       | 354.4    | 0.03658                  | 3.5134    | 0.3020   | 4.2602                             | 5.9881    | 0.00                        |
| $T$      | $p$<br>[MeV/c]        | Ionization                  | Brems    | Pair prod                | Photonucl | Total    | CSDA range<br>[g/cm <sup>2</sup> ] |           |                             |
|          |                       |                             |          | [MeV cm <sup>2</sup> /g] |           |          |                                    |           |                             |
| 10.0 MeV | $4.704 \times 10^1$   | 4.928                       |          |                          |           | 4.928    |                                    |           | $1.143 \times 10^0$         |
| 14.0 MeV | $5.616 \times 10^1$   | 3.880                       |          |                          |           | 3.880    |                                    |           | $2.067 \times 10^0$         |
| 20.0 MeV | $6.802 \times 10^1$   | 3.057                       |          |                          |           | 3.057    |                                    |           | $3.828 \times 10^0$         |
| 30.0 MeV | $8.509 \times 10^1$   | 2.393                       |          |                          |           | 2.393    |                                    |           | $7.574 \times 10^0$         |
| 40.0 MeV | $1.003 \times 10^2$   | 2.056                       |          |                          |           | 2.056    |                                    |           | $1.211 \times 10^1$         |
| 80.0 MeV | $1.527 \times 10^2$   | 1.565                       |          |                          |           | 1.565    |                                    |           | $3.509 \times 10^1$         |
| 100. MeV | $1.764 \times 10^2$   | 1.479                       |          |                          |           | 1.479    |                                    |           | $4.827 \times 10^1$         |
| 140. MeV | $2.218 \times 10^2$   | 1.396                       |          |                          |           | 1.396    |                                    |           | $7.623 \times 10^1$         |
| 200. MeV | $2.868 \times 10^2$   | 1.353                       |          |                          |           | 1.353    |                                    |           | $1.200 \times 10^2$         |
| 253. MeV | $3.431 \times 10^2$   | 1.346                       |          |                          | 0.000     | 1.346    |                                    |           | <i>Minimum ionization</i>   |
| 300. MeV | $3.917 \times 10^2$   | 1.349                       | 0.000    |                          | 0.000     | 1.349    |                                    |           | $1.942 \times 10^2$         |
| 400. MeV | $4.945 \times 10^2$   | 1.367                       | 0.000    |                          | 0.000     | 1.367    |                                    |           | $2.679 \times 10^2$         |
| 800. MeV | $8.995 \times 10^2$   | 1.451                       | 0.001    |                          | 0.000     | 1.452    |                                    |           | $5.516 \times 10^2$         |
| 1.00 GeV | $1.101 \times 10^3$   | 1.485                       | 0.001    |                          | 0.000     | 1.486    |                                    |           | $6.877 \times 10^2$         |
| 1.40 GeV | $1.502 \times 10^3$   | 1.539                       | 0.002    |                          | 0.001     | 1.541    |                                    |           | $9.517 \times 10^2$         |
| 2.00 GeV | $2.103 \times 10^3$   | 1.598                       | 0.003    | 0.001                    | 0.001     | 1.602    |                                    |           | $1.333 \times 10^3$         |
| 3.00 GeV | $3.104 \times 10^3$   | 1.665                       | 0.004    | 0.002                    | 0.001     | 1.673    |                                    |           | $1.943 \times 10^3$         |
| 4.00 GeV | $4.104 \times 10^3$   | 1.711                       | 0.006    | 0.004                    | 0.002     | 1.724    |                                    |           | $2.531 \times 10^3$         |
| 8.00 GeV | $8.105 \times 10^3$   | 1.816                       | 0.016    | 0.014                    | 0.003     | 1.851    |                                    |           | $4.762 \times 10^3$         |
| 10.0 GeV | $1.011 \times 10^4$   | 1.848                       | 0.021    | 0.020                    | 0.004     | 1.894    |                                    |           | $5.830 \times 10^3$         |
| 14.0 GeV | $1.411 \times 10^4$   | 1.894                       | 0.032    | 0.033                    | 0.006     | 1.966    |                                    |           | $7.901 \times 10^3$         |
| 20.0 GeV | $2.011 \times 10^4$   | 1.940                       | 0.050    | 0.055                    | 0.008     | 2.053    |                                    |           | $1.089 \times 10^4$         |
| 30.0 GeV | $3.011 \times 10^4$   | 1.988                       | 0.082    | 0.096                    | 0.012     | 2.179    |                                    |           | $1.561 \times 10^4$         |
| 40.0 GeV | $4.011 \times 10^4$   | 2.021                       | 0.116    | 0.141                    | 0.015     | 2.294    |                                    |           | $2.008 \times 10^4$         |
| 80.0 GeV | $8.011 \times 10^4$   | 2.093                       | 0.262    | 0.341                    | 0.030     | 2.727    |                                    |           | $3.604 \times 10^4$         |
| 100. GeV | $1.001 \times 10^5$   | 2.115                       | 0.340    | 0.449                    | 0.037     | 2.942    |                                    |           | $4.310 \times 10^4$         |
| 140. GeV | $1.401 \times 10^5$   | 2.147                       | 0.499    | 0.671                    | 0.052     | 3.369    |                                    |           | $5.580 \times 10^4$         |
| 200. GeV | $2.001 \times 10^5$   | 2.180                       | 0.748    | 1.023                    | 0.074     | 4.025    |                                    |           | $7.208 \times 10^4$         |
| 234. GeV | $2.339 \times 10^5$   | 2.194                       | 0.890    | 1.218                    | 0.086     | 4.389    |                                    |           | <i>Muon critical energy</i> |
| 300. GeV | $3.001 \times 10^5$   | 2.217                       | 1.173    | 1.611                    | 0.111     | 5.112    |                                    |           | $9.408 \times 10^4$         |
| 400. GeV | $4.001 \times 10^5$   | 2.243                       | 1.613    | 2.221                    | 0.147     | 6.224    |                                    |           | $1.118 \times 10^5$         |
| 800. GeV | $8.001 \times 10^5$   | 2.305                       | 3.427    | 4.724                    | 0.298     | 10.755   |                                    |           | $1.601 \times 10^5$         |
| 1.00 TeV | $1.000 \times 10^6$   | 2.325                       | 4.360    | 6.005                    | 0.375     | 13.065   |                                    |           | $1.770 \times 10^5$         |
| 1.40 TeV | $1.400 \times 10^6$   | 2.355                       | 6.228    | 8.560                    | 0.531     | 17.675   |                                    |           | $2.032 \times 10^5$         |
| 2.00 TeV | $2.000 \times 10^6$   | 2.388                       | 9.086    | 12.459                   | 0.768     | 24.702   |                                    |           | $2.318 \times 10^5$         |
| 3.00 TeV | $3.000 \times 10^6$   | 2.425                       | 13.858   | 18.940                   | 1.175     | 36.399   |                                    |           | $2.649 \times 10^5$         |
| 4.00 TeV | $4.000 \times 10^6$   | 2.453                       | 18.692   | 25.490                   | 1.588     | 48.224   |                                    |           | $2.887 \times 10^5$         |
| 8.00 TeV | $8.000 \times 10^6$   | 2.519                       | 38.184   | 51.823                   | 3.304     | 95.831   |                                    |           | $3.464 \times 10^5$         |
| 10.0 TeV | $1.000 \times 10^7$   | 2.541                       | 48.006   | 65.060                   | 4.186     | 119.794  |                                    |           | $3.651 \times 10^5$         |
| 14.0 TeV | $1.400 \times 10^7$   | 2.575                       | 67.596   | 91.471                   | 5.997     | 167.640  |                                    |           | $3.932 \times 10^5$         |
| 20.0 TeV | $2.000 \times 10^7$   | 2.611                       | 97.154   | 131.258                  | 8.775     | 239.799  |                                    |           | $4.229 \times 10^5$         |
| 30.0 TeV | $3.000 \times 10^7$   | 2.652                       | 146.362  | 197.456                  | 13.581    | 360.052  |                                    |           | $4.567 \times 10^5$         |
| 40.0 TeV | $4.000 \times 10^7$   | 2.682                       | 195.745  | 263.814                  | 18.504    | 480.747  |                                    |           | $4.807 \times 10^5$         |
| 80.0 TeV | $8.000 \times 10^7$   | 2.756                       | 393.572  | 529.421                  | 39.088    | 964.839  |                                    |           | $5.383 \times 10^5$         |
| 100. TeV | $1.000 \times 10^8$   | 2.781                       | 492.651  | 662.344                  | 49.730    | 1207.507 |                                    |           | $5.568 \times 10^5$         |