

Table 044: Muons in Ruthenium

| Z | A [g/mol] | ρ [g/cm ³] | I [eV] | a | $k = m_s$ | x_0 | x_1 | \bar{C} | δ_0 |
|----------|---------------------|-----------------------------|---------|---------------------------------------|-----------|----------|------------------------------------|-----------|------------|
| 44 (Ru) | 101.07 (2) | 12.410 | 441.0 | 0.19342 | 2.8707 | 0.0599 | 3.0834 | 4.7694 | 0.14 |
| T | p [MeV/c] | Ionization | Brems | Pair prod [MeV cm ² /g] | Photonucl | Total | CSDA range [g/cm ²] | | |
| 10.0 MeV | 4.704×10^1 | 4.772 | | | | 4.772 | 1.191×10^0 | | |
| 14.0 MeV | 5.616×10^1 | 3.770 | | | | 3.770 | 2.143×10^0 | | |
| 20.0 MeV | 6.802×10^1 | 2.977 | | | | 2.977 | 3.954×10^0 | | |
| 30.0 MeV | 8.509×10^1 | 2.334 | | | | 2.334 | 7.798×10^0 | | |
| 40.0 MeV | 1.003×10^2 | 2.005 | | | | 2.005 | 1.245×10^1 | | |
| 80.0 MeV | 1.527×10^2 | 1.524 | | | | 1.524 | 3.604×10^1 | | |
| 100. MeV | 1.764×10^2 | 1.439 | | | | 1.439 | 4.958×10^1 | | |
| 140. MeV | 2.218×10^2 | 1.355 | | | | 1.355 | 7.835×10^1 | | |
| 200. MeV | 2.868×10^2 | 1.314 | | | | 1.314 | 1.235×10^2 | | |
| 253. MeV | 3.431×10^2 | 1.307 | | | | 1.307 | <i>Minimum ionization</i> | | |
| 300. MeV | 3.917×10^2 | 1.310 | 0.000 | | 0.000 | 1.310 | 1.999×10^2 | | |
| 400. MeV | 4.945×10^2 | 1.327 | 0.000 | | 0.000 | 1.327 | 2.757×10^2 | | |
| 800. MeV | 8.995×10^2 | 1.408 | 0.001 | | 0.000 | 1.409 | 5.679×10^2 | | |
| 1.00 GeV | 1.101×10^3 | 1.441 | 0.001 | | 0.000 | 1.443 | 7.081×10^2 | | |
| 1.40 GeV | 1.502×10^3 | 1.494 | 0.002 | 0.000 | 0.001 | 1.496 | 9.800×10^2 | | |
| 2.00 GeV | 2.103×10^3 | 1.551 | 0.003 | 0.001 | 0.001 | 1.555 | 1.373×10^3 | | |
| 3.00 GeV | 3.104×10^3 | 1.615 | 0.004 | 0.003 | 0.001 | 1.623 | 2.001×10^3 | | |
| 4.00 GeV | 4.104×10^3 | 1.659 | 0.006 | 0.005 | 0.002 | 1.672 | 2.608×10^3 | | |
| 8.00 GeV | 8.105×10^3 | 1.759 | 0.016 | 0.016 | 0.003 | 1.794 | 4.909×10^3 | | |
| 10.0 GeV | 1.011×10^4 | 1.789 | 0.021 | 0.022 | 0.004 | 1.836 | 6.011×10^3 | | |
| 14.0 GeV | 1.411×10^4 | 1.831 | 0.032 | 0.035 | 0.005 | 1.904 | 8.149×10^3 | | |
| 20.0 GeV | 2.011×10^4 | 1.874 | 0.049 | 0.057 | 0.008 | 1.989 | 1.123×10^4 | | |
| 30.0 GeV | 3.011×10^4 | 1.919 | 0.081 | 0.099 | 0.011 | 2.112 | 1.611×10^4 | | |
| 40.0 GeV | 4.011×10^4 | 1.949 | 0.114 | 0.146 | 0.015 | 2.225 | 2.072×10^4 | | |
| 80.0 GeV | 8.011×10^4 | 2.017 | 0.258 | 0.349 | 0.030 | 2.654 | 3.715×10^4 | | |
| 100. GeV | 1.001×10^5 | 2.037 | 0.334 | 0.458 | 0.037 | 2.867 | 4.440×10^4 | | |
| 140. GeV | 1.401×10^5 | 2.068 | 0.490 | 0.684 | 0.051 | 3.294 | 5.741×10^4 | | |
| 200. GeV | 2.001×10^5 | 2.100 | 0.735 | 1.041 | 0.073 | 3.949 | 7.402×10^4 | | |
| 225. GeV | 2.254×10^5 | 2.110 | 0.839 | 1.190 | 0.082 | 4.222 | <i>Muon critical energy</i> | | |
| 300. GeV | 3.001×10^5 | 2.136 | 1.153 | 1.639 | 0.109 | 5.038 | 9.640×10^4 | | |
| 400. GeV | 4.001×10^5 | 2.162 | 1.585 | 2.258 | 0.145 | 6.151 | 1.143×10^5 | | |
| 800. GeV | 8.001×10^5 | 2.224 | 3.370 | 4.799 | 0.293 | 10.687 | 1.631×10^5 | | |
| 1.00 TeV | 1.000×10^6 | 2.244 | 4.287 | 6.099 | 0.369 | 13.000 | 1.800×10^5 | | |
| 1.40 TeV | 1.400×10^6 | 2.275 | 6.127 | 8.692 | 0.522 | 17.618 | 2.064×10^5 | | |
| 2.00 TeV | 2.000×10^6 | 2.308 | 8.941 | 12.651 | 0.755 | 24.657 | 2.350×10^5 | | |
| 3.00 TeV | 3.000×10^6 | 2.346 | 13.642 | 19.231 | 1.155 | 36.375 | 2.682×10^5 | | |
| 4.00 TeV | 4.000×10^6 | 2.374 | 18.406 | 25.880 | 1.561 | 48.222 | 2.920×10^5 | | |
| 8.00 TeV | 8.000×10^6 | 2.441 | 37.618 | 52.615 | 3.245 | 95.921 | 3.497×10^5 | | |
| 10.0 TeV | 1.000×10^7 | 2.463 | 47.302 | 66.055 | 4.110 | 119.932 | 3.683×10^5 | | |
| 14.0 TeV | 1.400×10^7 | 2.497 | 66.618 | 92.871 | 5.885 | 167.873 | 3.964×10^5 | | |
| 20.0 TeV | 2.000×10^7 | 2.534 | 95.768 | 133.268 | 8.606 | 240.177 | 4.261×10^5 | | |
| 30.0 TeV | 3.000×10^7 | 2.576 | 144.295 | 200.482 | 13.309 | 360.663 | 4.599×10^5 | | |
| 40.0 TeV | 4.000×10^7 | 2.606 | 193.001 | 267.858 | 18.123 | 481.589 | 4.838×10^5 | | |
| 80.0 TeV | 8.000×10^7 | 2.682 | 388.132 | 537.566 | 38.226 | 966.607 | 5.412×10^5 | | |
| 100. TeV | 1.000×10^8 | 2.706 | 485.870 | 672.550 | 48.610 | 1209.737 | 5.597×10^5 | | |