

Muons in einsteinium (Es)

| Z | A [g/mol] | ρ [g/cm ³] | I [eV] | a | $k = m_s$ | x_0 | x_1 | \bar{C} | δ_0 |
|---------|---------------|-----------------------------|--------|---------|-----------|--------|--------|-----------|------------|
| 99 (Es) | [252.0830(4)] | ?? | 980.0 | 0.25952 | 3.0000 | 0.5697 | 3.0000 | 6.3488 | 0.00 |

| 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 | 3.635 | | | | 3.635 | 1.620×10^0 |
| 14.0 MeV | 5.616×10^1 | 2.918 | | | | 2.918 | 2.858×10^0 |
| 20.0 MeV | 6.802×10^1 | 2.338 | | | | 2.338 | 5.178×10^0 |
| 30.0 MeV | 8.509×10^1 | 1.857 | | | | 1.857 | 1.004×10^1 |
| 40.0 MeV | 1.003×10^2 | 1.609 | | | | 1.609 | 1.586×10^1 |
| 80.0 MeV | 1.527×10^2 | 1.246 | | | | 1.246 | 4.493×10^1 |
| 100. MeV | 1.764×10^2 | 1.182 | | | | 1.183 | 6.145×10^1 |
| 140. MeV | 2.218×10^2 | 1.125 | | | | 1.125 | 9.629×10^1 |
| 200. MeV | 2.868×10^2 | 1.103 | | | | 1.103 | 1.503×10^2 |
| 213. MeV | 3.008×10^2 | 1.102 | 0.000 | | | 1.103 | <i>Minimum ionization</i> |
| 300. MeV | 3.917×10^2 | 1.116 | 0.000 | | 0.000 | 1.116 | 2.407×10^2 |
| 400. MeV | 4.945×10^2 | 1.142 | 0.000 | | 0.000 | 1.142 | 3.292×10^2 |
| 800. MeV | 8.995×10^2 | 1.236 | 0.001 | | 0.000 | 1.237 | 6.648×10^2 |
| 1.00 GeV | 1.101×10^3 | 1.271 | 0.002 | | 0.000 | 1.273 | 8.241×10^2 |
| 1.40 GeV | 1.502×10^3 | 1.325 | 0.003 | | 0.000 | 1.328 | 1.131×10^3 |
| 2.00 GeV | 2.103×10^3 | 1.382 | 0.005 | 0.001 | 0.001 | 1.389 | 1.573×10^3 |
| 3.00 GeV | 3.104×10^3 | 1.445 | 0.008 | 0.003 | 0.001 | 1.458 | 2.274×10^3 |
| 4.00 GeV | 4.104×10^3 | 1.488 | 0.012 | 0.006 | 0.001 | 1.509 | 2.948×10^3 |
| 8.00 GeV | 8.105×10^3 | 1.583 | 0.029 | 0.024 | 0.003 | 1.640 | 5.480×10^3 |
| 10.0 GeV | 1.011×10^4 | 1.611 | 0.039 | 0.034 | 0.004 | 1.689 | 6.681×10^3 |
| 14.0 GeV | 1.411×10^4 | 1.651 | 0.060 | 0.056 | 0.005 | 1.773 | 8.991×10^3 |
| 20.0 GeV | 2.011×10^4 | 1.690 | 0.093 | 0.093 | 0.007 | 1.885 | 1.227×10^4 |
| 30.0 GeV | 3.011×10^4 | 1.731 | 0.153 | 0.166 | 0.011 | 2.061 | 1.734×10^4 |
| 40.0 GeV | 4.011×10^4 | 1.758 | 0.216 | 0.246 | 0.014 | 2.235 | 2.200×10^4 |
| 80.0 GeV | 8.011×10^4 | 1.818 | 0.488 | 0.599 | 0.027 | 2.934 | 3.758×10^4 |
| 100. GeV | 1.001×10^5 | 1.837 | 0.632 | 0.790 | 0.034 | 3.295 | 4.401×10^4 |
| 123. GeV | 1.230×10^5 | 1.854 | 0.800 | 1.012 | 0.041 | 3.709 | <i>Muon critical energy</i> |
| 140. GeV | 1.401×10^5 | 1.864 | 0.928 | 1.183 | 0.047 | 4.025 | 5.498×10^4 |
| 200. GeV | 2.001×10^5 | 1.893 | 1.391 | 1.807 | 0.067 | 5.160 | 6.812×10^4 |
| 300. GeV | 3.001×10^5 | 1.926 | 2.180 | 2.847 | 0.100 | 7.055 | 8.465×10^4 |
| 400. GeV | 4.001×10^5 | 1.949 | 2.995 | 3.926 | 0.134 | 9.006 | 9.717×10^4 |
| 800. GeV | 8.001×10^5 | 2.005 | 6.355 | 8.349 | 0.271 | 16.982 | 1.290×10^5 |
| 1.00 TeV | 1.000×10^6 | 2.023 | 8.079 | 10.612 | 0.340 | 21.057 | 1.396×10^5 |
| 1.40 TeV | 1.400×10^6 | 2.051 | 11.533 | 15.122 | 0.482 | 29.190 | 1.556×10^5 |
| 2.00 TeV | 2.000×10^6 | 2.081 | 16.811 | 22.004 | 0.697 | 41.595 | 1.728×10^5 |
| 3.00 TeV | 3.000×10^6 | 2.116 | 25.615 | 33.440 | 1.065 | 62.237 | 1.923×10^5 |
| 4.00 TeV | 4.000×10^6 | 2.140 | 34.530 | 44.997 | 1.438 | 83.108 | 2.062×10^5 |
| 8.00 TeV | 8.000×10^6 | 2.201 | 70.446 | 91.441 | 2.985 | 167.075 | 2.394×10^5 |
| 10.0 TeV | 1.000×10^7 | 2.221 | 88.533 | 114.781 | 3.778 | 209.315 | 2.501×10^5 |
| 14.0 TeV | 1.400×10^7 | 2.252 | 124.607 | 161.363 | 5.406 | 293.630 | 2.662×10^5 |
| 20.0 TeV | 2.000×10^7 | 2.285 | 179.012 | 231.532 | 7.900 | 420.731 | 2.831×10^5 |
| 30.0 TeV | 3.000×10^7 | 2.323 | 269.672 | 348.258 | 12.204 | 632.459 | 3.024×10^5 |
| 40.0 TeV | 4.000×10^7 | 2.350 | 360.654 | 465.252 | 16.608 | 844.866 | 3.160×10^5 |
| 80.0 TeV | 8.000×10^7 | 2.418 | 724.557 | 933.539 | 34.978 | 1695.495 | 3.488×10^5 |
| 100. TeV | 1.000×10^8 | 2.440 | 906.620 | 1167.890 | 44.460 | 2121.412 | 3.593×10^5 |