

Muons in butane (C₄H₁₀)

| | $\langle Z/A \rangle$ | ρ [g/cm ³] | I [eV] | a | $k = m_s$ | x_0 | x_1 | \bar{C} | δ_0 |
|----------|-----------------------|-----------------------------|----------|---------------------------------------|-----------|---------|------------------------------------|-----------|------------|
| | 0.59497 | 2.489×10^{-3} | 48.3 | 0.10852 | 3.4884 | 1.3792 | 3.7528 | 8.5651 | 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 | 9.023 | | | | 9.023 | 6.102×10^{-1} | | |
| 14.0 MeV | 5.616×10^1 | 7.024 | | | | 7.024 | 1.118×10^0 | | |
| 20.0 MeV | 6.802×10^1 | 5.475 | | | | 5.475 | 2.097×10^0 | | |
| 30.0 MeV | 8.509×10^1 | 4.239 | | | | 4.239 | 4.202×10^0 | | |
| 40.0 MeV | 1.003×10^2 | 3.615 | | | | 3.615 | 6.773×10^0 | | |
| 80.0 MeV | 1.527×10^2 | 2.705 | | | | 2.706 | 1.998×10^1 | | |
| 100. MeV | 1.764×10^2 | 2.542 | | | | 2.542 | 2.762×10^1 | | |
| 140. MeV | 2.218×10^2 | 2.380 | | | | 2.381 | 4.396×10^1 | | |
| 200. MeV | 2.868×10^2 | 2.296 | | | | 2.296 | 6.972×10^1 | | |
| 266. MeV | 3.567×10^2 | 2.278 | | | 0.000 | 2.278 | <i>Minimum ionization</i> | | |
| 300. MeV | 3.917×10^2 | 2.281 | | | 0.000 | 2.281 | 1.135×10^2 | | |
| 400. MeV | 4.945×10^2 | 2.307 | | | 0.000 | 2.307 | 1.572×10^2 | | |
| 800. MeV | 8.995×10^2 | 2.451 | 0.000 | | 0.000 | 2.452 | 3.252×10^2 | | |
| 1.00 GeV | 1.101×10^3 | 2.513 | 0.000 | | 0.000 | 2.514 | 4.058×10^2 | | |
| 1.40 GeV | 1.502×10^3 | 2.614 | 0.000 | | 0.001 | 2.616 | 5.616×10^2 | | |
| 2.00 GeV | 2.103×10^3 | 2.729 | 0.000 | 0.000 | 0.001 | 2.730 | 7.859×10^2 | | |
| 3.00 GeV | 3.104×10^3 | 2.851 | 0.001 | 0.000 | 0.001 | 2.854 | 1.143×10^3 | | |
| 4.00 GeV | 4.104×10^3 | 2.928 | 0.001 | 0.001 | 0.002 | 2.932 | 1.489×10^3 | | |
| 8.00 GeV | 8.105×10^3 | 3.097 | 0.003 | 0.003 | 0.004 | 3.106 | 2.809×10^3 | | |
| 10.0 GeV | 1.011×10^4 | 3.146 | 0.004 | 0.004 | 0.005 | 3.158 | 3.447×10^3 | | |
| 14.0 GeV | 1.411×10^4 | 3.215 | 0.006 | 0.006 | 0.007 | 3.234 | 4.698×10^3 | | |
| 20.0 GeV | 2.011×10^4 | 3.283 | 0.009 | 0.010 | 0.009 | 3.312 | 6.530×10^3 | | |
| 30.0 GeV | 3.011×10^4 | 3.354 | 0.014 | 0.017 | 0.014 | 3.400 | 9.508×10^3 | | |
| 40.0 GeV | 4.011×10^4 | 3.400 | 0.020 | 0.026 | 0.018 | 3.464 | 1.242×10^4 | | |
| 80.0 GeV | 8.011×10^4 | 3.501 | 0.047 | 0.062 | 0.035 | 3.645 | 2.366×10^4 | | |
| 100. GeV | 1.001×10^5 | 3.531 | 0.061 | 0.083 | 0.043 | 3.718 | 2.909×10^4 | | |
| 140. GeV | 1.401×10^5 | 3.575 | 0.089 | 0.124 | 0.060 | 3.849 | 3.966×10^4 | | |
| 200. GeV | 2.001×10^5 | 3.620 | 0.135 | 0.190 | 0.085 | 4.031 | 5.489×10^4 | | |
| 300. GeV | 3.001×10^5 | 3.670 | 0.213 | 0.303 | 0.128 | 4.314 | 7.886×10^4 | | |
| 400. GeV | 4.001×10^5 | 3.705 | 0.295 | 0.421 | 0.170 | 4.592 | 1.013×10^5 | | |
| 800. GeV | 8.001×10^5 | 3.790 | 0.636 | 0.913 | 0.344 | 5.683 | 1.795×10^5 | | |
| 1.00 TeV | 1.000×10^6 | 3.818 | 0.813 | 1.169 | 0.432 | 6.231 | 2.131×10^5 | | |
| 1.40 TeV | 1.400×10^6 | 3.860 | 1.169 | 1.676 | 0.612 | 7.317 | 2.722×10^5 | | |
| 1.56 TeV | 1.557×10^6 | 3.873 | 1.311 | 1.879 | 0.684 | 7.747 | <i>Muon critical energy</i> | | |
| 2.00 TeV | 2.000×10^6 | 3.905 | 1.716 | 2.456 | 0.887 | 8.965 | 3.462×10^5 | | |
| 3.00 TeV | 3.000×10^6 | 3.957 | 2.636 | 3.754 | 1.359 | 11.707 | 4.436×10^5 | | |
| 4.00 TeV | 4.000×10^6 | 3.995 | 3.573 | 5.071 | 1.840 | 14.480 | 5.202×10^5 | | |
| 8.00 TeV | 8.000×10^6 | 4.087 | 7.373 | 10.381 | 3.843 | 25.685 | 7.249×10^5 | | |
| 10.0 TeV | 1.000×10^7 | 4.118 | 9.298 | 13.057 | 4.876 | 31.348 | 7.953×10^5 | | |
| 14.0 TeV | 1.400×10^7 | 4.164 | 13.140 | 18.386 | 7.005 | 42.695 | 9.042×10^5 | | |
| 20.0 TeV | 2.000×10^7 | 4.214 | 18.956 | 26.428 | 10.277 | 59.875 | 1.022×10^6 | | |
| 30.0 TeV | 3.000×10^7 | 4.271 | 28.645 | 39.804 | 15.962 | 88.683 | 1.159×10^6 | | |
| 40.0 TeV | 4.000×10^7 | 4.313 | 38.392 | 53.226 | 21.799 | 117.731 | 1.256×10^6 | | |
| 80.0 TeV | 8.000×10^7 | 4.416 | 77.477 | 106.962 | 46.325 | 235.180 | 1.492×10^6 | | |
| 100. TeV | 1.000×10^8 | 4.449 | 97.073 | 133.863 | 59.049 | 294.436 | 1.568×10^6 | | |