## Table 181: Muons in Lanthanum oxysulfide $La_2O_2S$

| $\langle Z/A \rangle$ | $\rho$ [g/cm$^3$] | $I$ [eV] | $a$ | $k = m_s$ | $x_0$ | $x_1$ | $\overline{C}$ | $\delta_0$ |
|---|---|---|---|---|---|---|---|---|
| 0.42706 | 5.860 | 421.2 | 0.21501 | 2.7298 | −0.0906 | 3.2664 | 5.4470 | 0.00 |

| $T$ | $p$ [MeV/$c$] | Ionization | Brems | Pair prod | Photonucl | Total | CSDA range [g/cm$^2$] |
|---|---|---|---|---|---|---|---|
| | | [MeV cm$^2$/g] | | | | | |
| 10.0 MeV | $4.704 \times 10^1$ | 4.760 | | | | 4.760 | $1.186 \times 10^0$ |
| 14.0 MeV | $5.616 \times 10^1$ | 3.753 | | | | 3.753 | $2.142 \times 10^0$ |
| 20.0 MeV | $6.802 \times 10^1$ | 2.961 | | | | 2.961 | $3.962 \times 10^0$ |
| 30.0 MeV | $8.509 \times 10^1$ | 2.321 | | | | 2.321 | $7.828 \times 10^0$ |
| 40.0 MeV | $1.003 \times 10^2$ | 1.996 | | | | 1.996 | $1.250 \times 10^1$ |
| 80.0 MeV | $1.527 \times 10^2$ | 1.519 | | | | 1.519 | $3.617 \times 10^1$ |
| 100. MeV | $1.764 \times 10^2$ | 1.433 | | | | 1.433 | $4.977 \times 10^1$ |
| 140. MeV | $2.218 \times 10^2$ | 1.349 | | | | 1.349 | $7.866 \times 10^1$ |
| 200. MeV | $2.868 \times 10^2$ | 1.308 | | | | 1.308 | $1.240 \times 10^2$ |
| 252. MeV | $3.421 \times 10^2$ | 1.301 | | | | 1.301 | *Minimum ionization* |
| 300. MeV | $3.917 \times 10^2$ | 1.304 | 0.000 | | 0.000 | 1.304 | $2.007 \times 10^2$ |
| 400. MeV | $4.945 \times 10^2$ | 1.322 | 0.000 | | 0.000 | 1.322 | $2.769 \times 10^2$ |
| 800. MeV | $8.995 \times 10^2$ | 1.404 | 0.001 | | 0.000 | 1.405 | $5.701 \times 10^2$ |
| 1.00 GeV | $1.101 \times 10^3$ | 1.438 | 0.001 | | 0.000 | 1.439 | $7.107 \times 10^2$ |
| 1.40 GeV | $1.502 \times 10^3$ | 1.491 | 0.002 | 0.000 | 0.001 | 1.494 | $9.833 \times 10^2$ |
| 2.00 GeV | $2.103 \times 10^3$ | 1.549 | 0.003 | 0.001 | 0.001 | 1.554 | $1.377 \times 10^3$ |
| 3.00 GeV | $3.104 \times 10^3$ | 1.615 | 0.005 | 0.003 | 0.001 | 1.624 | $2.005 \times 10^3$ |
| 4.00 GeV | $4.104 \times 10^3$ | 1.660 | 0.007 | 0.005 | 0.002 | 1.674 | $2.612 \times 10^3$ |
| 8.00 GeV | $8.105 \times 10^3$ | 1.763 | 0.016 | 0.016 | 0.003 | 1.799 | $4.908 \times 10^3$ |
| 10.0 GeV | $1.011 \times 10^4$ | 1.794 | 0.022 | 0.022 | 0.004 | 1.842 | $6.007 \times 10^3$ |
| 14.0 GeV | $1.411 \times 10^4$ | 1.838 | 0.033 | 0.035 | 0.006 | 1.913 | $8.136 \times 10^3$ |
| 20.0 GeV | $2.011 \times 10^4$ | 1.882 | 0.051 | 0.058 | 0.008 | 2.000 | $1.120 \times 10^4$ |
| 30.0 GeV | $3.011 \times 10^4$ | 1.929 | 0.084 | 0.101 | 0.011 | 2.125 | $1.605 \times 10^4$ |
| 40.0 GeV | $4.011 \times 10^4$ | 1.960 | 0.118 | 0.148 | 0.015 | 2.242 | $2.063 \times 10^4$ |
| 80.0 GeV | $8.011 \times 10^4$ | 2.028 | 0.267 | 0.356 | 0.030 | 2.682 | $3.691 \times 10^4$ |
| 100. GeV | $1.001 \times 10^5$ | 2.049 | 0.346 | 0.468 | 0.037 | 2.900 | $4.408 \times 10^4$ |
| 140. GeV | $1.401 \times 10^5$ | 2.079 | 0.508 | 0.699 | 0.051 | 3.338 | $5.693 \times 10^4$ |
| 200. GeV | $2.001 \times 10^5$ | 2.110 | 0.761 | 1.065 | 0.073 | 4.010 | $7.331 \times 10^4$ |
| 221. GeV | $2.209 \times 10^5$ | 2.119 | 0.849 | 1.190 | 0.080 | 4.239 | *Muon critical energy* |
| 300. GeV | $3.001 \times 10^5$ | 2.146 | 1.194 | 1.676 | 0.109 | 5.126 | $9.533 \times 10^4$ |
| 400. GeV | $4.001 \times 10^5$ | 2.171 | 1.641 | 2.310 | 0.145 | 6.268 | $1.129 \times 10^5$ |
| 800. GeV | $8.001 \times 10^5$ | 2.232 | 3.488 | 4.910 | 0.293 | 10.925 | $1.607 \times 10^5$ |
| 1.00 TeV | $1.000 \times 10^6$ | 2.252 | 4.438 | 6.240 | 0.368 | 13.299 | $1.773 \times 10^5$ |
| 1.40 TeV | $1.400 \times 10^6$ | 2.282 | 6.340 | 8.894 | 0.522 | 18.039 | $2.030 \times 10^5$ |
| 2.00 TeV | $2.000 \times 10^6$ | 2.315 | 9.251 | 12.943 | 0.755 | 25.266 | $2.310 \times 10^5$ |
| 3.00 TeV | $3.000 \times 10^6$ | 2.352 | 14.112 | 19.673 | 1.155 | 37.293 | $2.634 \times 10^5$ |
| 4.00 TeV | $4.000 \times 10^6$ | 2.379 | 19.037 | 26.476 | 1.560 | 49.454 | $2.866 \times 10^5$ |
| 8.00 TeV | $8.000 \times 10^6$ | 2.445 | 38.898 | 53.821 | 3.244 | 98.409 | $3.428 \times 10^5$ |
| 10.0 TeV | $1.000 \times 10^7$ | 2.467 | 48.907 | 67.567 | 4.109 | 123.051 | $3.610 \times 10^5$ |
| 14.0 TeV | $1.400 \times 10^7$ | 2.500 | 68.872 | 94.993 | 5.885 | 172.252 | $3.883 \times 10^5$ |
| 20.0 TeV | $2.000 \times 10^7$ | 2.536 | 98.997 | 136.310 | 8.608 | 246.453 | $4.173 \times 10^5$ |
| 30.0 TeV | $3.000 \times 10^7$ | 2.577 | 149.147 | 205.055 | 13.314 | 370.095 | $4.502 \times 10^5$ |
| 40.0 TeV | $4.000 \times 10^7$ | 2.607 | 199.479 | 273.965 | 18.132 | 494.184 | $4.735 \times 10^5$ |
| 80.0 TeV | $8.000 \times 10^7$ | 2.681 | 401.112 | 549.794 | 38.262 | 991.851 | $5.295 \times 10^5$ |
| 100. TeV | $1.000 \times 10^8$ | 2.705 | 502.101 | 687.836 | 48.663 | 1241.307 | $5.475 \times 10^5$ |