

**Table 239: Muons in Liquid propane (C<sub>3</sub>H<sub>8</sub>)**

$\langle Z/A \rangle$	$\rho$ [g/cm <sup>3</sup> ]	$I$ [eV]	$a$	$k = m_s$	$x_0$	$x_1$	$\bar{C}$	$\delta_0$
0.58962	0.493	52.0	0.10329	3.5620	0.2564	2.6271	3.4162	0.00
$T$	$p$ [MeV/c]	Ionization	Brems	Pair prod [MeV cm <sup>2</sup> /g]	Photonucl	Total	CSDA range [g/cm <sup>2</sup> ]	
10.0 MeV	$4.704 \times 10^1$	8.861				8.861	$6.217 \times 10^{-1}$	
14.0 MeV	$5.616 \times 10^1$	6.900				6.900	$1.139 \times 10^0$	
20.0 MeV	$6.802 \times 10^1$	5.380				5.380	$2.135 \times 10^0$	
30.0 MeV	$8.509 \times 10^1$	4.167				4.167	$4.277 \times 10^0$	
40.0 MeV	$1.003 \times 10^2$	3.554				3.554	$6.892 \times 10^0$	
80.0 MeV	$1.527 \times 10^2$	2.661				2.661	$2.032 \times 10^1$	
100. MeV	$1.764 \times 10^2$	2.501				2.501	$2.809 \times 10^1$	
140. MeV	$2.218 \times 10^2$	2.333				2.333	$4.472 \times 10^1$	
200. MeV	$2.868 \times 10^2$	2.232				2.232	$7.111 \times 10^1$	
300. MeV	$3.917 \times 10^2$	2.192			0.000	2.192	$1.165 \times 10^2$	
325. MeV	$4.171 \times 10^2$	2.191			0.000	2.191	<i>Minimum ionization</i>	
400. MeV	$4.945 \times 10^2$	2.197			0.000	2.197	$1.621 \times 10^2$	
800. MeV	$8.995 \times 10^2$	2.274	0.000		0.000	2.274	$3.411 \times 10^2$	
1.00 GeV	$1.101 \times 10^3$	2.310	0.000		0.000	2.310	$4.283 \times 10^2$	
1.40 GeV	$1.502 \times 10^3$	2.368	0.000		0.001	2.369	$5.992 \times 10^2$	
2.00 GeV	$2.103 \times 10^3$	2.432	0.000	0.000	0.001	2.434	$8.489 \times 10^2$	
3.00 GeV	$3.104 \times 10^3$	2.505	0.001	0.000	0.001	2.508	$1.253 \times 10^3$	
4.00 GeV	$4.104 \times 10^3$	2.556	0.001	0.001	0.002	2.560	$1.648 \times 10^3$	
8.00 GeV	$8.105 \times 10^3$	2.673	0.003	0.003	0.004	2.682	$3.170 \times 10^3$	
10.0 GeV	$1.011 \times 10^4$	2.708	0.004	0.004	0.005	2.721	$3.910 \times 10^3$	
14.0 GeV	$1.411 \times 10^4$	2.760	0.006	0.006	0.007	2.778	$5.364 \times 10^3$	
20.0 GeV	$2.011 \times 10^4$	2.812	0.009	0.010	0.009	2.840	$7.498 \times 10^3$	
30.0 GeV	$3.011 \times 10^4$	2.869	0.014	0.017	0.014	2.914	$1.097 \times 10^4$	
40.0 GeV	$4.011 \times 10^4$	2.907	0.020	0.026	0.018	2.971	$1.437 \times 10^4$	
80.0 GeV	$8.011 \times 10^4$	2.996	0.046	0.062	0.035	3.140	$2.744 \times 10^4$	
100. GeV	$1.001 \times 10^5$	3.024	0.060	0.082	0.043	3.210	$3.374 \times 10^4$	
140. GeV	$1.401 \times 10^5$	3.065	0.089	0.124	0.060	3.338	$4.596 \times 10^4$	
200. GeV	$2.001 \times 10^5$	3.108	0.134	0.190	0.085	3.518	$6.346 \times 10^4$	
300. GeV	$3.001 \times 10^5$	3.157	0.213	0.302	0.128	3.800	$9.080 \times 10^4$	
400. GeV	$4.001 \times 10^5$	3.192	0.294	0.419	0.170	4.076	$1.162 \times 10^5$	
800. GeV	$8.001 \times 10^5$	3.277	0.634	0.910	0.344	5.164	$2.032 \times 10^5$	
1.00 TeV	$1.000 \times 10^6$	3.304	0.810	1.164	0.432	5.710	$2.400 \times 10^5$	
1.36 TeV	$1.360 \times 10^6$	3.342	1.129	1.619	0.595	6.685	<i>Muon critical energy</i>	
1.40 TeV	$1.400 \times 10^6$	3.346	1.164	1.670	0.613	6.793	$3.041 \times 10^5$	
2.00 TeV	$2.000 \times 10^6$	3.391	1.710	2.446	0.888	8.435	$3.833 \times 10^5$	
3.00 TeV	$3.000 \times 10^6$	3.442	2.627	3.739	1.361	11.170	$4.860 \times 10^5$	
4.00 TeV	$4.000 \times 10^6$	3.479	3.561	5.052	1.842	13.935	$5.660 \times 10^5$	
8.00 TeV	$8.000 \times 10^6$	3.571	7.349	10.343	3.847	25.110	$7.769 \times 10^5$	
10.0 TeV	$1.000 \times 10^7$	3.601	9.267	13.009	4.881	30.758	$8.487 \times 10^5$	
14.0 TeV	$1.400 \times 10^7$	3.647	13.097	18.319	7.012	42.075	$9.595 \times 10^5$	
20.0 TeV	$2.000 \times 10^7$	3.696	18.897	26.331	10.288	59.212	$1.079 \times 10^6$	
30.0 TeV	$3.000 \times 10^7$	3.753	28.556	39.659	15.979	87.948	$1.217 \times 10^6$	
40.0 TeV	$4.000 \times 10^7$	3.795	38.275	53.032	21.824	116.925	$1.315 \times 10^6$	
80.0 TeV	$8.000 \times 10^7$	3.896	77.245	106.572	46.380	234.095	$1.552 \times 10^6$	
100. TeV	$1.000 \times 10^8$	3.930	96.786	133.376	59.121	293.212	$1.629 \times 10^6$	