

**Table 266: Muons in Toluene (C<sub>6</sub>H<sub>5</sub>CH<sub>3</sub>)**

	$\langle Z/A \rangle$	$\rho$ [g/cm <sup>3</sup> ]	$I$ [eV]	$a$	$k = m_s$	$x_0$	$x_1$	$\bar{C}$	$\delta_0$
	0.54265	0.867	62.5	0.13284	3.3558	0.1722	2.5728	3.3026	0.00
$T$	$p$ [MeV/c]	Ionization	Brems	Pair prod	Photonucl	Total	CSDA range [g/cm <sup>2</sup> ]		
10.0 MeV	$4.704 \times 10^1$	7.970				7.970	$6.923 \times 10^{-1}$		
14.0 MeV	$5.616 \times 10^1$	6.212				6.212	$1.267 \times 10^0$		
20.0 MeV	$6.802 \times 10^1$	4.847				4.847	$2.373 \times 10^0$		
30.0 MeV	$8.509 \times 10^1$	3.757				3.757	$4.749 \times 10^0$		
40.0 MeV	$1.003 \times 10^2$	3.206				3.206	$7.649 \times 10^0$		
80.0 MeV	$1.527 \times 10^2$	2.404				2.404	$2.252 \times 10^1$		
100. MeV	$1.764 \times 10^2$	2.253				2.254	$3.113 \times 10^1$		
140. MeV	$2.218 \times 10^2$	2.098				2.098	$4.962 \times 10^1$		
200. MeV	$2.868 \times 10^2$	2.008				2.008	$7.896 \times 10^1$		
300. MeV	$3.917 \times 10^2$	1.973			0.000	1.973	$1.294 \times 10^2$		
318. MeV	$4.105 \times 10^2$	1.972			0.000	1.972	<i>Minimum ionization</i>		
400. MeV	$4.945 \times 10^2$	1.978			0.000	1.978	$1.800 \times 10^2$		
800. MeV	$8.995 \times 10^2$	2.050	0.000		0.000	2.051	$3.787 \times 10^2$		
1.00 GeV	$1.101 \times 10^3$	2.083	0.000		0.000	2.084	$4.754 \times 10^2$		
1.40 GeV	$1.502 \times 10^3$	2.137	0.000		0.001	2.138	$6.648 \times 10^2$		
2.00 GeV	$2.103 \times 10^3$	2.197	0.000	0.000	0.001	2.199	$9.413 \times 10^2$		
3.00 GeV	$3.104 \times 10^3$	2.265	0.001	0.001	0.001	2.268	$1.389 \times 10^3$		
4.00 GeV	$4.104 \times 10^3$	2.312	0.001	0.001	0.002	2.316	$1.825 \times 10^3$		
8.00 GeV	$8.105 \times 10^3$	2.420	0.003	0.003	0.004	2.429	$3.506 \times 10^3$		
10.0 GeV	$1.011 \times 10^4$	2.452	0.004	0.004	0.005	2.465	$4.323 \times 10^3$		
14.0 GeV	$1.411 \times 10^4$	2.500	0.006	0.006	0.007	2.519	$5.928 \times 10^3$		
20.0 GeV	$2.011 \times 10^4$	2.548	0.009	0.010	0.009	2.577	$8.281 \times 10^3$		
30.0 GeV	$3.011 \times 10^4$	2.600	0.015	0.018	0.014	2.647	$1.211 \times 10^4$		
40.0 GeV	$4.011 \times 10^4$	2.636	0.021	0.027	0.018	2.702	$1.585 \times 10^4$		
80.0 GeV	$8.011 \times 10^4$	2.717	0.048	0.065	0.035	2.866	$3.020 \times 10^4$		
100. GeV	$1.001 \times 10^5$	2.743	0.063	0.086	0.043	2.935	$3.709 \times 10^4$		
140. GeV	$1.401 \times 10^5$	2.781	0.093	0.129	0.060	3.063	$5.043 \times 10^4$		
200. GeV	$2.001 \times 10^5$	2.821	0.140	0.198	0.084	3.243	$6.946 \times 10^4$		
300. GeV	$3.001 \times 10^5$	2.866	0.221	0.315	0.127	3.529	$9.900 \times 10^4$		
400. GeV	$4.001 \times 10^5$	2.898	0.306	0.437	0.169	3.810	$1.263 \times 10^5$		
800. GeV	$8.001 \times 10^5$	2.975	0.658	0.947	0.341	4.921	$2.184 \times 10^5$		
1.00 TeV	$1.000 \times 10^6$	3.001	0.840	1.211	0.428	5.480	$2.569 \times 10^5$		
1.20 TeV	$1.204 \times 10^6$	3.022	1.026	1.477	0.519	6.044	<i>Muon critical energy</i>		
1.40 TeV	$1.400 \times 10^6$	3.039	1.208	1.736	0.607	6.590	$3.234 \times 10^5$		
2.00 TeV	$2.000 \times 10^6$	3.080	1.773	2.542	0.879	8.274	$4.044 \times 10^5$		
3.00 TeV	$3.000 \times 10^6$	3.128	2.720	3.884	1.348	11.080	$5.085 \times 10^5$		
4.00 TeV	$4.000 \times 10^6$	3.162	3.685	5.245	1.824	13.917	$5.889 \times 10^5$		
8.00 TeV	$8.000 \times 10^6$	3.246	7.595	10.731	3.808	25.381	$7.987 \times 10^5$		
10.0 TeV	$1.000 \times 10^7$	3.274	9.574	13.495	4.831	31.174	$8.697 \times 10^5$		
14.0 TeV	$1.400 \times 10^7$	3.316	13.523	19.001	6.938	42.779	$9.788 \times 10^5$		
20.0 TeV	$2.000 \times 10^7$	3.362	19.499	27.309	10.178	60.347	$1.096 \times 10^6$		
30.0 TeV	$3.000 \times 10^7$	3.414	29.451	41.129	15.802	89.797	$1.231 \times 10^6$		
40.0 TeV	$4.000 \times 10^7$	3.452	39.461	54.995	21.577	119.485	$1.328 \times 10^6$		
80.0 TeV	$8.000 \times 10^7$	3.546	79.579	110.509	45.826	239.459	$1.559 \times 10^6$		
100. TeV	$1.000 \times 10^8$	3.577	99.687	138.300	58.401	299.965	$1.634 \times 10^6$		