

**Table 006: Muons in Carbon (amorphous)**

Z	A [g/mol]	$\rho$ [g/cm <sup>3</sup> ]	I [eV]	a	$k = m_s$	$x_0$	$x_1$	$\bar{C}$	$\delta_0$
6 (C)	12.0107 (8)	2.000	78.0	0.20240	3.0036	-0.0351	2.4860	2.9925	0.10
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	$4.704 \times 10^1$	7.117				7.117	$7.771 \times 10^{-1}$		
14.0 MeV	$5.616 \times 10^1$	5.550				5.551	$1.420 \times 10^0$		
20.0 MeV	$6.802 \times 10^1$	4.332				4.332	$2.658 \times 10^0$		
30.0 MeV	$8.509 \times 10^1$	3.357				3.357	$5.317 \times 10^0$		
40.0 MeV	$1.003 \times 10^2$	2.862				2.862	$8.564 \times 10^0$		
80.0 MeV	$1.527 \times 10^2$	2.129				2.129	$2.529 \times 10^1$		
100. MeV	$1.764 \times 10^2$	1.994				1.994	$3.502 \times 10^1$		
140. MeV	$2.218 \times 10^2$	1.857				1.857	$5.591 \times 10^1$		
200. MeV	$2.868 \times 10^2$	1.778				1.779	$8.905 \times 10^1$		
300. MeV	$3.917 \times 10^2$	1.749			0.000	1.749	$1.459 \times 10^2$		
313. MeV	$4.055 \times 10^2$	1.749			0.000	1.749	<i>Minimum ionization</i>		
400. MeV	$4.945 \times 10^2$	1.755			0.000	1.756	$2.030 \times 10^2$		
800. MeV	$8.995 \times 10^2$	1.824	0.000		0.000	1.825	$4.266 \times 10^2$		
1.00 GeV	$1.101 \times 10^3$	1.855	0.000		0.000	1.856	$5.353 \times 10^2$		
1.40 GeV	$1.502 \times 10^3$	1.906	0.000		0.001	1.907	$7.478 \times 10^2$		
2.00 GeV	$2.103 \times 10^3$	1.961	0.000	0.000	0.001	1.963	$1.058 \times 10^3$		
3.00 GeV	$3.104 \times 10^3$	2.025	0.001	0.001	0.001	2.028	$1.558 \times 10^3$		
4.00 GeV	$4.104 \times 10^3$	2.069	0.001	0.001	0.002	2.073	$2.046 \times 10^3$		
8.00 GeV	$8.105 \times 10^3$	2.169	0.003	0.003	0.004	2.179	$3.922 \times 10^3$		
10.0 GeV	$1.011 \times 10^4$	2.200	0.004	0.004	0.005	2.212	$4.832 \times 10^3$		
14.0 GeV	$1.411 \times 10^4$	2.243	0.006	0.007	0.007	2.263	$6.619 \times 10^3$		
20.0 GeV	$2.011 \times 10^4$	2.288	0.010	0.011	0.009	2.318	$9.237 \times 10^3$		
30.0 GeV	$3.011 \times 10^4$	2.336	0.016	0.019	0.013	2.384	$1.349 \times 10^4$		
40.0 GeV	$4.011 \times 10^4$	2.368	0.022	0.028	0.018	2.436	$1.764 \times 10^4$		
80.0 GeV	$8.011 \times 10^4$	2.444	0.050	0.068	0.034	2.596	$3.351 \times 10^4$		
100. GeV	$1.001 \times 10^5$	2.467	0.065	0.089	0.042	2.665	$4.112 \times 10^4$		
140. GeV	$1.401 \times 10^5$	2.502	0.097	0.134	0.059	2.792	$5.577 \times 10^4$		
200. GeV	$2.001 \times 10^5$	2.539	0.145	0.206	0.084	2.974	$7.659 \times 10^4$		
300. GeV	$3.001 \times 10^5$	2.580	0.230	0.327	0.125	3.262	$1.087 \times 10^5$		
400. GeV	$4.001 \times 10^5$	2.610	0.317	0.453	0.167	3.547	$1.381 \times 10^5$		
800. GeV	$8.001 \times 10^5$	2.681	0.681	0.981	0.338	4.681	$2.359 \times 10^5$		
1.00 TeV	$1.000 \times 10^6$	2.705	0.869	1.254	0.424	5.252	$2.762 \times 10^5$		
1.06 TeV	$1.060 \times 10^6$	2.711	0.925	1.335	0.451	5.422	<i>Muon critical energy</i>		
1.40 TeV	$1.400 \times 10^6$	2.740	1.248	1.797	0.602	6.387	$3.452 \times 10^5$		
2.00 TeV	$2.000 \times 10^6$	2.778	1.830	2.630	0.871	8.109	$4.284 \times 10^5$		
3.00 TeV	$3.000 \times 10^6$	2.822	2.806	4.016	1.335	10.979	$5.340 \times 10^5$		
4.00 TeV	$4.000 \times 10^6$	2.853	3.799	5.422	1.807	13.882	$6.148 \times 10^5$		
8.00 TeV	$8.000 \times 10^6$	2.931	7.821	11.088	3.773	25.613	$8.238 \times 10^5$		
10.0 TeV	$1.000 \times 10^7$	2.956	9.855	13.942	4.785	31.539	$8.940 \times 10^5$		
14.0 TeV	$1.400 \times 10^7$	2.995	13.913	19.628	6.871	43.408	$1.002 \times 10^6$		
20.0 TeV	$2.000 \times 10^7$	3.037	20.052	28.206	10.076	61.371	$1.117 \times 10^6$		
30.0 TeV	$3.000 \times 10^7$	3.085	30.273	42.478	15.640	91.476	$1.250 \times 10^6$		
40.0 TeV	$4.000 \times 10^7$	3.120	40.549	56.796	21.350	121.816	$1.344 \times 10^6$		
80.0 TeV	$8.000 \times 10^7$	3.206	81.720	114.122	45.316	244.366	$1.572 \times 10^6$		
100. TeV	$1.000 \times 10^8$	3.235	102.350	142.820	57.740	306.145	$1.645 \times 10^6$		