

Muons in ms20 tissue substitute

	$\langle Z/A \rangle$	ρ [g/cm ³]	I [eV]	a	$k = m_s$	x_0	x_1	\bar{C}	δ_0
	0.53886	1.000	75.1	0.08294	3.6061	0.1997	2.8033	3.5341	0.00
T	p [MeV/c]	Ionization	Brems	Pair prod	Photonucl	Total	CSDA range [g/cm ²]		
				[MeV cm ² /g]					
10.0 MeV	4.704×10^1	7.731				7.731			7.149×10^{-1}
14.0 MeV	5.616×10^1	6.030				6.030			1.307×10^0
20.0 MeV	6.802×10^1	4.709				4.710			2.446×10^0
30.0 MeV	8.509×10^1	3.654				3.654			4.890×10^0
40.0 MeV	1.003×10^2	3.120				3.120			7.872×10^0
80.0 MeV	1.527×10^2	2.342				2.342			2.314×10^1
100. MeV	1.764×10^2	2.200				2.201			3.197×10^1
140. MeV	2.218×10^2	2.051				2.052			5.088×10^1
200. MeV	2.868×10^2	1.966				1.966			8.087×10^1
300. MeV	3.917×10^2	1.935			0.000	1.935			1.323×10^2
313. MeV	4.055×10^2	1.934			0.000	1.935			<i>Minimum ionization</i>
400. MeV	4.945×10^2	1.942			0.000	1.942			1.839×10^2
800. MeV	8.995×10^2	2.016	0.000		0.000	2.017			3.861×10^2
1.00 GeV	1.101×10^3	2.050	0.000		0.000	2.051			4.844×10^2
1.40 GeV	1.502×10^3	2.105	0.000		0.001	2.106			6.767×10^2
2.00 GeV	2.103×10^3	2.165	0.001	0.000	0.001	2.167			9.574×10^2
3.00 GeV	3.104×10^3	2.234	0.001	0.001	0.001	2.237			1.411×10^3
4.00 GeV	4.104×10^3	2.281	0.001	0.001	0.002	2.285			1.853×10^3
8.00 GeV	8.105×10^3	2.389	0.003	0.003	0.004	2.400			3.556×10^3
10.0 GeV	1.011×10^4	2.422	0.005	0.004	0.005	2.436			4.383×10^3
14.0 GeV	1.411×10^4	2.470	0.007	0.007	0.007	2.491			6.005×10^3
20.0 GeV	2.011×10^4	2.518	0.011	0.012	0.009	2.551			8.384×10^3
30.0 GeV	3.011×10^4	2.570	0.018	0.021	0.014	2.623			1.225×10^4
40.0 GeV	4.011×10^4	2.606	0.025	0.031	0.018	2.680			1.602×10^4
80.0 GeV	8.011×10^4	2.687	0.057	0.076	0.034	2.855			3.045×10^4
100. GeV	1.001×10^5	2.713	0.074	0.100	0.042	2.929			3.737×10^4
140. GeV	1.401×10^5	2.750	0.108	0.151	0.059	3.069			5.071×10^4
200. GeV	2.001×10^5	2.790	0.163	0.231	0.084	3.268			6.964×10^4
300. GeV	3.001×10^5	2.835	0.258	0.367	0.125	3.585			9.884×10^4
400. GeV	4.001×10^5	2.866	0.356	0.509	0.167	3.899			1.256×10^5
800. GeV	8.001×10^5	2.943	0.764	1.100	0.338	5.146			2.146×10^5
1.00 TeV	1.000×10^6	2.968	0.975	1.406	0.424	5.774			2.513×10^5
1.06 TeV	1.057×10^6	2.975	1.035	1.491	0.449	5.950			<i>Muon critical energy</i>
1.40 TeV	1.400×10^6	3.007	1.400	2.013	0.602	7.022			3.140×10^5
2.00 TeV	2.000×10^6	3.048	2.054	2.945	0.872	8.918			3.897×10^5
3.00 TeV	3.000×10^6	3.095	3.149	4.496	1.336	12.075			4.857×10^5
4.00 TeV	4.000×10^6	3.129	4.263	6.068	1.807	15.268			5.592×10^5
8.00 TeV	8.000×10^6	3.212	8.775	12.403	3.773	28.164			7.492×10^5
10.0 TeV	1.000×10^7	3.240	11.057	15.594	4.785	34.677			8.131×10^5
14.0 TeV	1.400×10^7	3.282	15.612	21.951	6.872	47.718			9.110×10^5
20.0 TeV	2.000×10^7	3.327	22.503	31.541	10.078	67.449			1.016×10^6
30.0 TeV	3.000×10^7	3.379	33.975	47.495	15.643	100.493			1.137×10^6
40.0 TeV	4.000×10^7	3.417	45.508	63.502	21.355	133.783			1.223×10^6
80.0 TeV	8.000×10^7	3.510	91.750	127.583	45.332	268.174			1.430×10^6
100. TeV	1.000×10^8	3.540	114.930	159.661	57.762	335.894			1.497×10^6