

Muons in standard rock

$\langle Z/A \rangle$	ρ [g/cm ³]	I [eV]	a	$k = m_s$	x_0	x_1	$\overline{C}$	δ_0
0.50000	2.650	136.4	0.08301	3.4120	0.0492	3.0549	3.7738	0.00
T	p [MeV/c]	Ionization	Brems	Pair prod [MeV cm ² /g]	Photonucl	Total	CSDA range [g/cm ²]	
10.0 MeV	4.704×10^1	6.619				6.619	8.400×10^{-1}	
14.0 MeV	5.616×10^1	5.180				5.180	1.530×10^0	
20.0 MeV	6.802×10^1	4.057				4.057	2.854×10^0	
30.0 MeV	8.509×10^1	3.157				3.157	5.687×10^0	
40.0 MeV	1.003×10^2	2.701				2.702	9.133×10^0	
80.0 MeV	1.527×10^2	2.028				2.029	2.675×10^1	
100. MeV	1.764×10^2	1.904				1.904	3.695×10^1	
140. MeV	2.218×10^2	1.779				1.779	5.878×10^1	
200. MeV	2.868×10^2	1.710				1.710	9.331×10^1	
297. MeV	3.884×10^2	1.688			0.000	1.688	<i>Minimum ionization</i>	
300. MeV	3.917×10^2	1.688			0.000	1.688		
400. MeV	4.945×10^2	1.698			0.000	1.698		
800. MeV	8.995×10^2	1.774	0.000		0.000	1.775		
1.00 GeV	1.101×10^3	1.808	0.000		0.000	1.808	5.534×10^2	
1.40 GeV	1.502×10^3	1.861	0.001	0.000	0.001	1.862	7.712×10^2	
2.00 GeV	2.103×10^3	1.920	0.001	0.000	0.001	1.922	1.088×10^3	
3.00 GeV	3.104×10^3	1.986	0.001	0.001	0.001	1.990	1.599×10^3	
4.00 GeV	4.104×10^3	2.033	0.002	0.002	0.002	2.038	2.095×10^3	
8.00 GeV	8.105×10^3	2.138	0.005	0.005	0.004	2.152	3.998×10^3	
10.0 GeV	1.011×10^4	2.170	0.007	0.007	0.005	2.188	4.920×10^3	
14.0 GeV	1.411×10^4	2.215	0.010	0.011	0.006	2.244	6.724×10^3	
20.0 GeV	2.011×10^4	2.262	0.016	0.019	0.009	2.305	9.360×10^3	
30.0 GeV	3.011×10^4	2.311	0.027	0.033	0.013	2.383	1.362×10^4	
40.0 GeV	4.011×10^4	2.344	0.038	0.048	0.017	2.447	1.776×10^4	
80.0 GeV	8.011×10^4	2.420	0.085	0.115	0.033	2.653	3.343×10^4	
100. GeV	1.001×10^5	2.444	0.110	0.151	0.041	2.747	4.084×10^4	
140. GeV	1.401×10^5	2.479	0.162	0.227	0.057	2.925	5.495×10^4	
200. GeV	2.001×10^5	2.515	0.244	0.346	0.081	3.187	7.459×10^4	
300. GeV	3.001×10^5	2.557	0.384	0.548	0.121	3.610	1.041×10^5	
400. GeV	4.001×10^5	2.586	0.529	0.758	0.162	4.035	1.302×10^5	
693. GeV	6.934×10^5	2.643	0.968	1.393	0.282	5.287	<i>Muon critical energy</i>	
800. GeV	8.001×10^5	2.658	1.131	1.629	0.327	5.745		
1.00 TeV	1.000×10^6	2.681	1.441	2.079	0.410	6.612	2.453×10^5	
1.40 TeV	1.400×10^6	2.717	2.065	2.972	0.582	8.336	2.991×10^5	
2.00 TeV	2.000×10^6	2.755	3.023	4.338	0.842	10.958	3.617×10^5	
3.00 TeV	3.000×10^6	2.798	4.625	6.611	1.290	15.325	4.385×10^5	
4.00 TeV	4.000×10^6	2.830	6.253	8.913	1.745	19.742	4.959×10^5	
8.00 TeV	8.000×10^6	2.908	12.836	18.180	3.639	37.563	6.403×10^5	
10.0 TeV	1.000×10^7	2.933	16.161	22.845	4.613	46.553	6.881×10^5	
14.0 TeV	1.400×10^7	2.972	22.799	32.142	6.619	64.532	7.607×10^5	
20.0 TeV	2.000×10^7	3.014	32.834	46.158	9.698	91.704	8.384×10^5	
30.0 TeV	3.000×10^7	3.062	49.519	69.488	15.037	137.107	9.270×10^5	
40.0 TeV	4.000×10^7	3.097	66.279	92.888	20.513	182.777	9.899×10^5	
80.0 TeV	8.000×10^7	3.184	133.489	186.562	43.458	366.693	1.141×10^6	
100. TeV	1.000×10^8	3.212	167.180	233.450	55.340	459.182	1.190×10^6	