Muons in calcium carbonate ($CaCO_3$)

$\langle Z/A \rangle$	ρ [g/cm^3]	I [eV]	a	$k = m_s$	x_0	x_1	$\overline{C}$	δ_0
0.49955	2.800	136.4	0.08301	3.4120	0.0492	3.0549	3.7738	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	6.613				6.613	8.408×10^{-1}
14.0 MeV	5.616×10^1	5.175				5.175	1.532×10^0
20.0 MeV	6.802×10^1	4.053				4.054	2.857×10^0
30.0 MeV	8.509×10^1	3.154				3.154	5.692×10^0
40.0 MeV	1.003×10^2	2.699				2.699	9.141×10^0
80.0 MeV	1.527×10^2	2.027				2.027	2.677×10^1
100. MeV	1.764×10^2	1.903				1.903	3.698×10^1
140. MeV	2.218×10^2	1.778				1.778	5.883×10^1
200. MeV	2.868×10^2	1.708				1.708	9.339×10^1
297. MeV	3.884×10^2	1.686			0.000	1.686	*Minimum ionization*
300. MeV	3.917×10^2	1.686			0.000	1.686	1.525×10^2
400. MeV	4.945×10^2	1.697			0.000	1.697	2.116×10^2
800. MeV	8.995×10^2	1.773	0.000		0.000	1.773	4.422×10^2
1.00 GeV	1.101×10^3	1.806	0.000		0.000	1.807	5.539×10^2
1.40 GeV	1.502×10^3	1.859	0.001	0.000	0.001	1.861	7.719×10^2
2.00 GeV	2.103×10^3	1.918	0.001	0.000	0.001	1.920	1.089×10^3
3.00 GeV	3.104×10^3	1.985	0.002	0.001	0.001	1.989	1.600×10^3
4.00 GeV	4.104×10^3	2.031	0.002	0.002	0.002	2.037	2.097×10^3
8.00 GeV	8.105×10^3	2.136	0.006	0.006	0.004	2.151	4.001×10^3
10.0 GeV	1.011×10^4	2.168	0.008	0.008	0.005	2.188	4.923×10^3
14.0 GeV	1.411×10^4	2.213	0.012	0.013	0.006	2.244	6.727×10^3
20.0 GeV	2.011×10^4	2.259	0.018	0.021	0.009	2.308	9.361×10^3
30.0 GeV	3.011×10^4	2.309	0.030	0.036	0.013	2.388	1.362×10^4
40.0 GeV	4.011×10^4	2.342	0.042	0.053	0.017	2.455	1.775×10^4
80.0 GeV	8.011×10^4	2.418	0.095	0.129	0.033	2.675	3.333×10^4
100. GeV	1.001×10^5	2.442	0.123	0.169	0.041	2.775	4.067×10^4
140. GeV	1.401×10^5	2.476	0.181	0.253	0.057	2.968	5.460×10^4
200. GeV	2.001×10^5	2.513	0.272	0.387	0.081	3.253	7.390×10^4
300. GeV	3.001×10^5	2.555	0.428	0.612	0.121	3.716	1.026×10^5
400. GeV	4.001×10^5	2.584	0.589	0.846	0.161	4.181	1.280×10^5
631. GeV	6.316×10^5	2.631	0.973	1.402	0.256	5.262	*Muon critical energy*
800. GeV	8.001×10^5	2.656	1.259	1.813	0.326	6.054	2.071×10^5
1.00 TeV	1.000×10^6	2.679	1.604	2.311	0.410	7.004	2.378×10^5
1.40 TeV	1.400×10^6	2.714	2.298	3.302	0.581	8.895	2.883×10^5
2.00 TeV	2.000×10^6	2.752	3.362	4.819	0.841	11.774	3.468×10^5
3.00 TeV	3.000×10^6	2.796	5.142	7.342	1.287	16.567	4.181×10^5
4.00 TeV	4.000×10^6	2.827	6.949	9.896	1.742	21.415	4.710×10^5
8.00 TeV	8.000×10^6	2.905	14.255	20.176	3.631	40.968	6.038×10^5
10.0 TeV	1.000×10^7	2.930	17.944	25.349	4.603	50.828	6.475×10^5
14.0 TeV	1.400×10^7	2.969	25.307	35.664	6.605	70.545	7.140×10^5
20.0 TeV	2.000×10^7	3.011	36.434	51.213	9.678	100.336	7.850×10^5
30.0 TeV	3.000×10^7	3.060	54.944	77.086	15.005	150.094	8.660×10^5
40.0 TeV	4.000×10^7	3.095	73.535	103.033	20.468	200.132	9.235×10^5
80.0 TeV	8.000×10^7	3.181	148.069	206.906	43.362	401.518	1.062×10^6
100. TeV	1.000×10^8	3.209	185.424	258.899	55.217	502.749	1.106×10^6