Table 014: Muons in Silicon

Z	A [g/mol]	ρ [g/cm^3]	I [eV]	a	$k = m_s$	x_0	x_1	$\overline{C}$	δ_0
14 (Si)	28.0855 (3)	2.329	173.0	0.14921	3.2546	0.2015	2.8716	4.4355	0.14

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	6.363				6.363	8.779×10^{-1}
14.0 MeV	5.616×10^1	4.987				4.987	1.595×10^0
20.0 MeV	6.802×10^1	3.912				3.912	2.969×10^0
30.0 MeV	8.509×10^1	3.047				3.047	5.905×10^0
40.0 MeV	1.003×10^2	2.608				2.608	9.476×10^0
80.0 MeV	1.527×10^2	1.965				1.965	2.770×10^1
100. MeV	1.764×10^2	1.849				1.849	3.822×10^1
140. MeV	2.218×10^2	1.737				1.737	6.064×10^1
200. MeV	2.868×10^2	1.678				1.678	9.590×10^1
273. MeV	3.633×10^2	1.664			0.000	1.664	*Minimum ionization*
300. MeV	3.917×10^2	1.665			0.000	1.666	1.559×10^2
400. MeV	4.945×10^2	1.681			0.000	1.681	2.157×10^2
800. MeV	8.995×10^2	1.767	0.000		0.000	1.768	4.475×10^2
1.00 GeV	1.101×10^3	1.803	0.000		0.000	1.804	5.595×10^2
1.40 GeV	1.502×10^3	1.860	0.001	0.000	0.001	1.862	7.776×10^2
2.00 GeV	2.103×10^3	1.922	0.001	0.001	0.001	1.924	1.094×10^3
3.00 GeV	3.104×10^3	1.991	0.002	0.001	0.001	1.995	1.604×10^3
4.00 GeV	4.104×10^3	2.038	0.003	0.002	0.002	2.045	2.099×10^3
8.00 GeV	8.105×10^3	2.145	0.006	0.006	0.004	2.162	3.994×10^3
10.0 GeV	1.011×10^4	2.177	0.009	0.009	0.005	2.199	4.911×10^3
14.0 GeV	1.411×10^4	2.224	0.013	0.014	0.006	2.257	6.705×10^3
20.0 GeV	2.011×10^4	2.270	0.020	0.023	0.009	2.322	9.325×10^3
30.0 GeV	3.011×10^4	2.319	0.033	0.040	0.013	2.405	1.355×10^4
40.0 GeV	4.011×10^4	2.352	0.046	0.059	0.017	2.474	1.765×10^4
80.0 GeV	8.011×10^4	2.427	0.105	0.142	0.033	2.707	3.308×10^4
100. GeV	1.001×10^5	2.451	0.136	0.187	0.040	2.814	4.033×10^4
140. GeV	1.401×10^5	2.485	0.200	0.279	0.056	3.021	5.404×10^4
200. GeV	2.001×10^5	2.522	0.300	0.425	0.080	3.328	7.295×10^4
300. GeV	3.001×10^5	2.563	0.472	0.675	0.119	3.831	1.009×10^5
400. GeV	4.001×10^5	2.593	0.651	0.935	0.159	4.338	1.255×10^5
582. GeV	5.816×10^5	2.631	0.982	1.417	0.232	5.263	*Muon critical energy*
800. GeV	8.001×10^5	2.664	1.389	2.003	0.322	6.379	2.010×10^5
1.00 TeV	1.000×10^6	2.687	1.770	2.551	0.404	7.413	2.301×10^5
1.40 TeV	1.400×10^6	2.723	2.535	3.645	0.573	9.476	2.777×10^5
2.00 TeV	2.000×10^6	2.760	3.708	5.319	0.830	12.617	3.324×10^5
3.00 TeV	3.000×10^6	2.804	5.670	8.101	1.270	17.846	3.988×10^5
4.00 TeV	4.000×10^6	2.836	7.662	10.917	1.718	23.134	4.478×10^5
8.00 TeV	8.000×10^6	2.913	15.713	22.251	3.581	44.458	5.704×10^5
10.0 TeV	1.000×10^7	2.938	19.777	27.954	4.539	55.209	6.107×10^5
14.0 TeV	1.400×10^7	2.977	27.892	39.323	6.510	76.704	6.719×10^5
20.0 TeV	2.000×10^7	3.019	40.156	56.460	9.536	109.172	7.372×10^5
30.0 TeV	3.000×10^7	3.067	60.546	84.985	14.778	163.377	8.116×10^5
40.0 TeV	4.000×10^7	3.102	81.023	113.592	20.152	217.870	8.644×10^5
80.0 TeV	8.000×10^7	3.188	163.133	228.110	42.660	437.091	9.915×10^5
100. TeV	1.000×10^8	3.216	204.290	285.430	54.310	547.247	1.032×10^6