Table 011: Muons in Sodium

Z	A [g/mol]	ρ [g/cm^3]	I [eV]	a	$k = m_s$	x_0	x_1	$\overline{C}$	δ_0
11 (Na)	22.98976928 (2)	0.971	149.0	0.07772	3.6452	0.2880	3.1962	5.0526	0.08

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	6.245				6.245	8.929×10^{-1}
14.0 MeV	5.616×10^1	4.891				4.891	1.624×10^0
20.0 MeV	6.802×10^1	3.833				3.834	3.026×10^0
30.0 MeV	8.509×10^1	2.985				2.985	6.023×10^0
40.0 MeV	1.003×10^2	2.554				2.554	9.668×10^0
80.0 MeV	1.527×10^2	1.926				1.926	2.827×10^1
100. MeV	1.764×10^2	1.813				1.813	3.900×10^1
140. MeV	2.218×10^2	1.704				1.704	6.186×10^1
200. MeV	2.868×10^2	1.650				1.650	9.776×10^1
263. MeV	3.527×10^2	1.639			0.000	1.639	*Minimum ionization*
300. MeV	3.917×10^2	1.641			0.000	1.641	1.587×10^2
400. MeV	4.945×10^2	1.658			0.000	1.659	2.193×10^2
800. MeV	8.995×10^2	1.747	0.000		0.000	1.747	4.541×10^2
1.00 GeV	1.101×10^3	1.783	0.000		0.000	1.784	5.674×10^2
1.40 GeV	1.502×10^3	1.840	0.000	0.000	0.001	1.841	7.879×10^2
2.00 GeV	2.103×10^3	1.901	0.001	0.000	0.001	1.903	1.108×10^3
3.00 GeV	3.104×10^3	1.969	0.001	0.001	0.001	1.973	1.623×10^3
4.00 GeV	4.104×10^3	2.016	0.002	0.002	0.002	2.022	2.124×10^3
8.00 GeV	8.105×10^3	2.122	0.005	0.005	0.004	2.135	4.042×10^3
10.0 GeV	1.011×10^4	2.153	0.007	0.007	0.005	2.171	4.971×10^3
14.0 GeV	1.411×10^4	2.198	0.010	0.011	0.006	2.226	6.789×10^3
20.0 GeV	2.011×10^4	2.244	0.015	0.018	0.009	2.286	9.447×10^3
30.0 GeV	3.011×10^4	2.292	0.025	0.031	0.013	2.361	1.375×10^4
40.0 GeV	4.011×10^4	2.324	0.036	0.046	0.017	2.422	1.793×10^4
80.0 GeV	8.011×10^4	2.397	0.081	0.110	0.033	2.621	3.377×10^4
100. GeV	1.001×10^5	2.419	0.105	0.145	0.041	2.711	4.128×10^4
140. GeV	1.401×10^5	2.453	0.155	0.217	0.057	2.882	5.558×10^4
200. GeV	2.001×10^5	2.488	0.233	0.331	0.081	3.133	7.554×10^4
300. GeV	3.001×10^5	2.528	0.367	0.524	0.121	3.540	1.055×10^5
400. GeV	4.001×10^5	2.556	0.505	0.725	0.161	3.948	1.323×10^5
712. GeV	7.119×10^5	2.613	0.951	1.372	0.289	5.226	*Muon critical energy*
800. GeV	8.001×10^5	2.624	1.080	1.559	0.326	5.590	2.170×10^5
1.00 TeV	1.000×10^6	2.647	1.377	1.990	0.409	6.423	2.504×10^5
1.40 TeV	1.400×10^6	2.681	1.973	2.844	0.580	8.078	3.058×10^5
2.00 TeV	2.000×10^6	2.717	2.888	4.151	0.840	10.597	3.705×10^5
3.00 TeV	3.000×10^6	2.759	4.420	6.326	1.286	14.792	4.500×10^5
4.00 TeV	4.000×10^6	2.789	5.976	8.530	1.740	19.035	5.095×10^5
8.00 TeV	8.000×10^6	2.863	12.267	17.398	3.628	36.157	6.594×10^5
10.0 TeV	1.000×10^7	2.888	15.445	21.861	4.600	44.794	7.090×10^5
14.0 TeV	1.400×10^7	2.925	21.790	30.758	6.599	62.072	7.845×10^5
20.0 TeV	2.000×10^7	2.965	31.380	44.172	9.668	88.186	8.652×10^5
30.0 TeV	3.000×10^7	3.011	47.326	66.497	14.989	131.824	9.574×10^5
40.0 TeV	4.000×10^7	3.045	63.344	88.889	20.447	175.725	1.023×10^6
80.0 TeV	8.000×10^7	3.127	127.579	178.524	43.311	352.543	1.180×10^6
100. TeV	1.000×10^8	3.155	159.780	223.390	55.150	441.475	1.231×10^6