Table 094: Muons in Plutonium

Z	A [g/mol]	ρ [g/cm^3]	I [eV]	a	$k = m_s$	x_0	x_1	$\overline{C}$	δ_0
94 (Pu)	[244.06420 (4)]	19.840	921.0	0.20419	2.7679	0.1557	3.3981	5.8748	0.14

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	3.619				3.619	1.619×10^0
14.0 MeV	5.616×10^1	2.898				2.898	2.865×10^0
20.0 MeV	6.802×10^1	2.316				2.316	5.204×10^0
30.0 MeV	8.509×10^1	1.835				1.835	1.011×10^1
40.0 MeV	1.003×10^2	1.587				1.587	1.601×10^1
80.0 MeV	1.527×10^2	1.220				1.221	4.559×10^1
100. MeV	1.764×10^2	1.158				1.158	6.246×10^1
140. MeV	2.218×10^2	1.098				1.099	9.808×10^1
200. MeV	2.868×10^2	1.073				1.073	1.535×10^2
227. MeV	3.154×10^2	1.071	0.000			1.071	*Minimum ionization*
300. MeV	3.917×10^2	1.078	0.000		0.000	1.078	2.467×10^2
400. MeV	4.945×10^2	1.098	0.000		0.000	1.099	3.386×10^2
800. MeV	8.995×10^2	1.180	0.001		0.000	1.181	6.891×10^2
1.00 GeV	1.101×10^3	1.211	0.002		0.000	1.214	8.561×10^2
1.40 GeV	1.502×10^3	1.262	0.003		0.001	1.265	1.179×10^3
2.00 GeV	2.103×10^3	1.316	0.004	0.001	0.001	1.322	1.642×10^3
3.00 GeV	3.104×10^3	1.377	0.008	0.003	0.001	1.390	2.378×10^3
4.00 GeV	4.104×10^3	1.420	0.011	0.006	0.002	1.439	3.085×10^3
8.00 GeV	8.105×10^3	1.515	0.028	0.023	0.003	1.569	5.736×10^3
10.0 GeV	1.011×10^4	1.544	0.037	0.033	0.004	1.618	6.990×10^3
14.0 GeV	1.411×10^4	1.585	0.056	0.054	0.005	1.701	9.400×10^3
20.0 GeV	2.011×10^4	1.626	0.087	0.089	0.007	1.810	1.282×10^4
30.0 GeV	3.011×10^4	1.669	0.143	0.158	0.011	1.981	1.809×10^4
40.0 GeV	4.011×10^4	1.698	0.202	0.233	0.014	2.147	2.294×10^4
80.0 GeV	8.011×10^4	1.761	0.456	0.567	0.027	2.812	3.918×10^4
100. GeV	1.001×10^5	1.780	0.591	0.747	0.034	3.153	4.589×10^4
126. GeV	1.262×10^5	1.799	0.770	0.987	0.043	3.599	*Muon critical energy*
140. GeV	1.401×10^5	1.807	0.867	1.118	0.047	3.841	5.737×10^4
200. GeV	2.001×10^5	1.836	1.299	1.707	0.067	4.910	7.116×10^4
300. GeV	3.001×10^5	1.868	2.036	2.688	0.101	6.695	8.855×10^4
400. GeV	4.001×10^5	1.891	2.798	3.706	0.134	8.531	1.018×10^5
800. GeV	8.001×10^5	1.946	5.938	7.879	0.272	16.037	1.354×10^5
1.00 TeV	1.000×10^6	1.964	7.550	10.014	0.341	19.871	1.466×10^5
1.40 TeV	1.400×10^6	1.991	10.778	14.270	0.483	27.524	1.636×10^5
2.00 TeV	2.000×10^6	2.020	15.712	20.764	0.699	39.196	1.818×10^5
3.00 TeV	3.000×10^6	2.054	23.943	31.553	1.068	58.619	2.026×10^5
4.00 TeV	4.000×10^6	2.078	32.278	42.456	1.442	78.257	2.173×10^5
8.00 TeV	8.000×10^6	2.138	65.860	86.276	2.994	157.270	2.526×10^5
10.0 TeV	1.000×10^7	2.158	82.773	108.300	3.790	197.023	2.640×10^5
14.0 TeV	1.400×10^7	2.188	116.505	152.247	5.423	276.365	2.810×10^5
20.0 TeV	2.000×10^7	2.220	167.380	218.444	7.924	395.970	2.991×10^5
30.0 TeV	3.000×10^7	2.257	252.157	328.571	12.242	595.230	3.195×10^5
40.0 TeV	4.000×10^7	2.284	337.238	438.952	16.659	795.135	3.340×10^5
80.0 TeV	8.000×10^7	2.351	677.542	880.778	35.088	1595.760	3.688×10^5
100. TeV	1.000×10^8	2.372	847.800	1101.890	44.600	1996.665	3.800×10^5