

**Table 094: Muons in Plutonium**

Z	A [g/mol]	$\rho$ [g/cm <sup>3</sup> ]	I [eV]	a	$k = m_s$	$x_0$	$x_1$	$\bar{C}$	$\delta_0$
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 <sup>2</sup> /g]	Photonucl	Total	CSDA range [g/cm <sup>2</sup> ]		
10.0 MeV	$4.704 \times 10^1$	3.619				3.619	$1.619 \times 10^0$		
14.0 MeV	$5.616 \times 10^1$	2.898				2.898	$2.865 \times 10^0$		
20.0 MeV	$6.802 \times 10^1$	2.316				2.316	$5.204 \times 10^0$		
30.0 MeV	$8.509 \times 10^1$	1.835				1.835	$1.011 \times 10^1$		
40.0 MeV	$1.003 \times 10^2$	1.587				1.587	$1.601 \times 10^1$		
80.0 MeV	$1.527 \times 10^2$	1.220				1.221	$4.559 \times 10^1$		
100. MeV	$1.764 \times 10^2$	1.158				1.158	$6.246 \times 10^1$		
140. MeV	$2.218 \times 10^2$	1.098				1.099	$9.808 \times 10^1$		
200. MeV	$2.868 \times 10^2$	1.073				1.073	$1.535 \times 10^2$		
227. MeV	$3.154 \times 10^2$	1.071	0.000			1.071	<i>Minimum ionization</i>		
300. MeV	$3.917 \times 10^2$	1.078	0.000		0.000	1.078	$2.467 \times 10^2$		
400. MeV	$4.945 \times 10^2$	1.098	0.000		0.000	1.099	$3.386 \times 10^2$		
800. MeV	$8.995 \times 10^2$	1.180	0.001		0.000	1.181	$6.891 \times 10^2$		
1.00 GeV	$1.101 \times 10^3$	1.211	0.002		0.000	1.214	$8.561 \times 10^2$		
1.40 GeV	$1.502 \times 10^3$	1.262	0.003		0.001	1.265	$1.179 \times 10^3$		
2.00 GeV	$2.103 \times 10^3$	1.316	0.004	0.001	0.001	1.322	$1.642 \times 10^3$		
3.00 GeV	$3.104 \times 10^3$	1.377	0.008	0.003	0.001	1.390	$2.378 \times 10^3$		
4.00 GeV	$4.104 \times 10^3$	1.420	0.011	0.006	0.002	1.439	$3.085 \times 10^3$		
8.00 GeV	$8.105 \times 10^3$	1.515	0.028	0.023	0.003	1.569	$5.736 \times 10^3$		
10.0 GeV	$1.011 \times 10^4$	1.544	0.037	0.033	0.004	1.618	$6.990 \times 10^3$		
14.0 GeV	$1.411 \times 10^4$	1.585	0.056	0.054	0.005	1.701	$9.400 \times 10^3$		
20.0 GeV	$2.011 \times 10^4$	1.626	0.087	0.089	0.007	1.810	$1.282 \times 10^4$		
30.0 GeV	$3.011 \times 10^4$	1.669	0.143	0.158	0.011	1.981	$1.809 \times 10^4$		
40.0 GeV	$4.011 \times 10^4$	1.698	0.202	0.233	0.014	2.147	$2.294 \times 10^4$		
80.0 GeV	$8.011 \times 10^4$	1.761	0.456	0.567	0.027	2.812	$3.918 \times 10^4$		
100. GeV	$1.001 \times 10^5$	1.780	0.591	0.747	0.034	3.153	$4.589 \times 10^4$		
126. GeV	$1.262 \times 10^5$	1.799	0.770	0.987	0.043	3.599	<i>Muon critical energy</i>		
140. GeV	$1.401 \times 10^5$	1.807	0.867	1.118	0.047	3.841	$5.737 \times 10^4$		
200. GeV	$2.001 \times 10^5$	1.836	1.299	1.707	0.067	4.910	$7.116 \times 10^4$		
300. GeV	$3.001 \times 10^5$	1.868	2.036	2.688	0.101	6.695	$8.855 \times 10^4$		
400. GeV	$4.001 \times 10^5$	1.891	2.798	3.706	0.134	8.531	$1.018 \times 10^5$		
800. GeV	$8.001 \times 10^5$	1.946	5.938	7.879	0.272	16.037	$1.354 \times 10^5$		
1.00 TeV	$1.000 \times 10^6$	1.964	7.550	10.014	0.341	19.871	$1.466 \times 10^5$		
1.40 TeV	$1.400 \times 10^6$	1.991	10.778	14.270	0.483	27.524	$1.636 \times 10^5$		
2.00 TeV	$2.000 \times 10^6$	2.020	15.712	20.764	0.699	39.196	$1.818 \times 10^5$		
3.00 TeV	$3.000 \times 10^6$	2.054	23.943	31.553	1.068	58.619	$2.026 \times 10^5$		
4.00 TeV	$4.000 \times 10^6$	2.078	32.278	42.456	1.442	78.257	$2.173 \times 10^5$		
8.00 TeV	$8.000 \times 10^6$	2.138	65.860	86.276	2.994	157.270	$2.526 \times 10^5$		
10.0 TeV	$1.000 \times 10^7$	2.158	82.773	108.300	3.790	197.023	$2.640 \times 10^5$		
14.0 TeV	$1.400 \times 10^7$	2.188	116.505	152.247	5.423	276.365	$2.810 \times 10^5$		
20.0 TeV	$2.000 \times 10^7$	2.220	167.380	218.444	7.924	395.970	$2.991 \times 10^5$		
30.0 TeV	$3.000 \times 10^7$	2.257	252.157	328.571	12.242	595.230	$3.195 \times 10^5$		
40.0 TeV	$4.000 \times 10^7$	2.284	337.238	438.952	16.659	795.135	$3.340 \times 10^5$		
80.0 TeV	$8.000 \times 10^7$	2.351	677.542	880.778	35.088	1595.760	$3.688 \times 10^5$		
100. TeV	$1.000 \times 10^8$	2.372	847.800	1101.890	44.600	1996.665	$3.800 \times 10^5$		