Muons in neptunium (Np)

Z	A [g/mol]	ρ [g/cm^3]	I [eV]	a	$k = m_s$	x_0	x_1	$\overline{C}$	δ_0
93 (Np)	[237.04817 (2)]	20.250	902.0	0.19741	2.8082	0.1869	3.3690	5.8149	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	3.707				3.707	1.578×10^0
14.0 MeV	5.616×10^1	2.967				2.968	2.795×10^0
20.0 MeV	6.802×10^1	2.370				2.370	5.080×10^0
30.0 MeV	8.509×10^1	1.878				1.878	9.879×10^0
40.0 MeV	1.003×10^2	1.623				1.623	1.564×10^1
80.0 MeV	1.527×10^2	1.249				1.249	4.456×10^1
100. MeV	1.764×10^2	1.183				1.183	6.106×10^1
140. MeV	2.218×10^2	1.123				1.123	9.590×10^1
200. MeV	2.868×10^2	1.096				1.097	1.502×10^2
227. MeV	3.154×10^2	1.095	0.000			1.095	*Minimum ionization*
300. MeV	3.917×10^2	1.102	0.000		0.000	1.102	2.413×10^2
400. MeV	4.945×10^2	1.122	0.000		0.000	1.123	3.312×10^2
800. MeV	8.995×10^2	1.205	0.001		0.000	1.207	6.743×10^2
1.00 GeV	1.101×10^3	1.237	0.002		0.000	1.240	8.377×10^2
1.40 GeV	1.502×10^3	1.289	0.003		0.001	1.292	1.153×10^3
2.00 GeV	2.103×10^3	1.344	0.004	0.001	0.001	1.350	1.607×10^3
3.00 GeV	3.104×10^3	1.406	0.008	0.003	0.001	1.418	2.329×10^3
4.00 GeV	4.104×10^3	1.449	0.011	0.006	0.002	1.468	3.021×10^3
8.00 GeV	8.105×10^3	1.545	0.028	0.023	0.003	1.600	5.621×10^3
10.0 GeV	1.011×10^4	1.574	0.037	0.033	0.004	1.649	6.852×10^3
14.0 GeV	1.411×10^4	1.616	0.056	0.054	0.005	1.733	9.217×10^3
20.0 GeV	2.011×10^4	1.657	0.088	0.090	0.007	1.843	1.257×10^4
30.0 GeV	3.011×10^4	1.700	0.144	0.159	0.011	2.015	1.776×10^4
40.0 GeV	4.011×10^4	1.729	0.203	0.236	0.014	2.183	2.252×10^4
80.0 GeV	8.011×10^4	1.793	0.460	0.573	0.027	2.855	3.850×10^4
100. GeV	1.001×10^5	1.812	0.596	0.755	0.034	3.199	4.512×10^4
127. GeV	1.271×10^5	1.832	0.783	1.006	0.043	3.666	*Muon critical energy*
140. GeV	1.401×10^5	1.840	0.875	1.130	0.047	3.894	5.644×10^4
200. GeV	2.001×10^5	1.869	1.312	1.725	0.067	4.974	7.005×10^4
300. GeV	3.001×10^5	1.902	2.056	2.717	0.101	6.777	8.721×10^4
400. GeV	4.001×10^5	1.925	2.824	3.746	0.135	8.631	1.003×10^5
800. GeV	8.001×10^5	1.981	5.995	7.962	0.272	16.212	1.336×10^5
1.00 TeV	1.000×10^6	1.999	7.622	10.119	0.342	20.084	1.446×10^5
1.40 TeV	1.400×10^6	2.027	10.880	14.419	0.485	27.813	1.615×10^5
2.00 TeV	2.000×10^6	2.057	15.861	20.982	0.701	39.602	1.795×10^5
3.00 TeV	3.000×10^6	2.091	24.170	31.884	1.071	59.218	2.000×10^5
4.00 TeV	4.000×10^6	2.116	32.585	42.901	1.446	79.051	2.146×10^5
8.00 TeV	8.000×10^6	2.177	66.487	87.181	3.002	158.849	2.495×10^5
10.0 TeV	1.000×10^7	2.197	83.561	109.435	3.801	198.996	2.608×10^5
14.0 TeV	1.400×10^7	2.227	117.615	153.842	5.438	279.125	2.777×10^5
20.0 TeV	2.000×10^7	2.260	168.976	220.732	7.946	399.916	2.955×10^5
30.0 TeV	3.000×10^7	2.298	254.563	332.013	12.277	601.154	3.158×10^5
40.0 TeV	4.000×10^7	2.326	340.457	443.549	16.709	803.043	3.301×10^5
80.0 TeV	8.000×10^7	2.393	684.014	890.002	35.192	1611.604	3.646×10^5
100. TeV	1.000×10^8	2.416	855.900	1113.430	44.730	2016.478	3.757×10^5