Muons in protactinium (Pa)

Z	A [g/mol]	ρ [g/cm^3]	I [eV]	a	$k = m_s$	x_0	x_1	$\overline{C}$	δ_0
91 (Pa)	[231.03588 (2)]	15.370	878.0	0.14770	2.9845	0.3144	3.5079	6.0327	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	3.749				3.749	1.558×10^0
14.0 MeV	5.616×10^1	2.999				2.999	2.761×10^0
20.0 MeV	6.802×10^1	2.395				2.395	5.023×10^0
30.0 MeV	8.509×10^1	1.897				1.897	9.774×10^0
40.0 MeV	1.003×10^2	1.640				1.640	1.548×10^1
80.0 MeV	1.527×10^2	1.263				1.263	4.408×10^1
100. MeV	1.764×10^2	1.197				1.197	6.038×10^1
140. MeV	2.218×10^2	1.134				1.134	9.486×10^1
200. MeV	2.868×10^2	1.109				1.109	1.485×10^2
226. MeV	3.145×10^2	1.107	0.000			1.108	*Minimum ionization*
300. MeV	3.917×10^2	1.115	0.000		0.000	1.116	2.386×10^2
400. MeV	4.945×10^2	1.137	0.000		0.000	1.137	3.274×10^2
800. MeV	8.995×10^2	1.222	0.001		0.000	1.223	6.659×10^2
1.00 GeV	1.101×10^3	1.255	0.002		0.000	1.257	8.272×10^2
1.40 GeV	1.502×10^3	1.307	0.003		0.001	1.310	1.139×10^3
2.00 GeV	2.103×10^3	1.363	0.004	0.001	0.001	1.369	1.586×10^3
3.00 GeV	3.104×10^3	1.425	0.008	0.003	0.001	1.438	2.298×10^3
4.00 GeV	4.104×10^3	1.468	0.011	0.006	0.002	1.488	2.981×10^3
8.00 GeV	8.105×10^3	1.566	0.027	0.023	0.003	1.620	5.547×10^3
10.0 GeV	1.011×10^4	1.595	0.036	0.033	0.004	1.669	6.763×10^3
14.0 GeV	1.411×10^4	1.637	0.056	0.054	0.005	1.753	9.100×10^3
20.0 GeV	2.011×10^4	1.679	0.086	0.089	0.007	1.862	1.242×10^4
30.0 GeV	3.011×10^4	1.722	0.142	0.158	0.011	2.034	1.755×10^4
40.0 GeV	4.011×10^4	1.751	0.200	0.233	0.014	2.200	2.228×10^4
80.0 GeV	8.011×10^4	1.816	0.453	0.566	0.027	2.864	3.817×10^4
100. GeV	1.001×10^5	1.835	0.587	0.746	0.034	3.204	4.477×10^4
130. GeV	1.301×10^5	1.857	0.792	1.022	0.044	3.716	*Muon critical energy*
140. GeV	1.401×10^5	1.864	0.861	1.117	0.047	3.891	5.609×10^4
200. GeV	2.001×10^5	1.893	1.291	1.704	0.068	4.957	6.973×10^4
300. GeV	3.001×10^5	1.926	2.023	2.684	0.101	6.736	8.698×10^4
400. GeV	4.001×10^5	1.949	2.780	3.700	0.135	8.566	1.001×10^5
800. GeV	8.001×10^5	2.005	5.901	7.864	0.273	16.045	1.337×10^5
1.00 TeV	1.000×10^6	2.024	7.502	9.994	0.343	19.865	1.449×10^5
1.40 TeV	1.400×10^6	2.051	10.710	14.241	0.486	27.491	1.620×10^5
2.00 TeV	2.000×10^6	2.081	15.614	20.722	0.702	39.121	1.802×10^5
3.00 TeV	3.000×10^6	2.116	23.794	31.489	1.073	58.474	2.009×10^5
4.00 TeV	4.000×10^6	2.141	32.078	42.369	1.450	78.040	2.157×10^5
8.00 TeV	8.000×10^6	2.202	65.456	86.099	3.010	156.768	2.511×10^5
10.0 TeV	1.000×10^7	2.222	82.266	108.077	3.810	196.377	2.625×10^5
14.0 TeV	1.400×10^7	2.253	115.794	151.933	5.452	275.434	2.796×10^5
20.0 TeV	2.000×10^7	2.286	166.362	217.994	7.966	394.610	2.977×10^5
30.0 TeV	3.000×10^7	2.324	250.545	327.892	12.307	593.071	3.183×10^5
40.0 TeV	4.000×10^7	2.351	335.009	438.043	16.749	792.154	3.328×10^5
80.0 TeV	8.000×10^7	2.419	673.294	878.959	35.283	1589.958	3.677×10^5
100. TeV	1.000×10^8	2.442	842.690	1099.620	44.850	1989.604	3.790×10^5