Muons in astatine (At)

Z	A [g/mol]	ρ [g/cm^3]	I [eV]	a	$k = m_s$	x_0	x_1	$\overline{C}$	δ_0
85 (At)	[209.98715 (6)]	??	825.0	0.31184	3.0000	0.7833	3.0000	7.0039	0.00

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	3.913				3.913	1.488×10^0
14.0 MeV	5.616×10^1	3.126				3.126	2.642×10^0
20.0 MeV	6.802×10^1	2.494				2.494	4.813×10^0
30.0 MeV	8.509×10^1	1.974				1.974	9.377×10^0
40.0 MeV	1.003×10^2	1.707				1.707	1.486×10^1
80.0 MeV	1.527×10^2	1.316				1.317	4.233×10^1
100. MeV	1.764×10^2	1.249				1.249	5.797×10^1
140. MeV	2.218×10^2	1.186				1.186	9.098×10^1
200. MeV	2.868×10^2	1.161				1.161	1.423×10^2
216. MeV	3.039×10^2	1.160	0.000			1.161	*Minimum ionization*
300. MeV	3.917×10^2	1.173	0.000		0.000	1.173	2.281×10^2
400. MeV	4.945×10^2	1.201	0.000		0.000	1.201	3.124×10^2
800. MeV	8.995×10^2	1.307	0.001		0.000	1.309	6.305×10^2
1.00 GeV	1.101×10^3	1.347	0.002		0.000	1.349	7.810×10^2
1.40 GeV	1.502×10^3	1.407	0.003		0.001	1.411	1.071×10^3
2.00 GeV	2.103×10^3	1.471	0.004	0.001	0.001	1.477	1.486×10^3
3.00 GeV	3.104×10^3	1.540	0.007	0.003	0.001	1.553	2.145×10^3
4.00 GeV	4.104×10^3	1.587	0.011	0.007	0.002	1.606	2.777×10^3
8.00 GeV	8.105×10^3	1.690	0.026	0.023	0.003	1.743	5.158×10^3
10.0 GeV	1.011×10^4	1.719	0.035	0.033	0.004	1.792	6.290×10^3
14.0 GeV	1.411×10^4	1.762	0.054	0.053	0.005	1.875	8.471×10^3
20.0 GeV	2.011×10^4	1.803	0.084	0.088	0.007	1.982	1.158×10^4
30.0 GeV	3.011×10^4	1.846	0.137	0.155	0.011	2.149	1.642×10^4
40.0 GeV	4.011×10^4	1.874	0.194	0.229	0.014	2.311	2.091×10^4
80.0 GeV	8.011×10^4	1.936	0.438	0.554	0.028	2.957	3.617×10^4
100. GeV	1.001×10^5	1.955	0.567	0.730	0.034	3.288	4.258×10^4
140. GeV	1.401×10^5	1.984	0.833	1.091	0.048	3.957	5.366×10^4
141. GeV	1.409×10^5	1.984	0.838	1.098	0.048	3.970	*Muon critical energy*
200. GeV	2.001×10^5	2.013	1.247	1.664	0.068	4.994	6.714×10^4
300. GeV	3.001×10^5	2.047	1.955	2.620	0.102	6.726	8.434×10^4
400. GeV	4.001×10^5	2.071	2.687	3.611	0.136	8.507	9.754×10^4
800. GeV	8.001×10^5	2.129	5.703	7.673	0.275	15.782	1.315×10^5
1.00 TeV	1.000×10^6	2.148	7.252	9.751	0.346	19.498	1.429×10^5
1.40 TeV	1.400×10^6	2.176	10.353	13.894	0.490	26.915	1.603×10^5
2.00 TeV	2.000×10^6	2.207	15.094	20.215	0.709	38.227	1.789×10^5
3.00 TeV	3.000×10^6	2.243	23.004	30.718	1.083	57.050	2.002×10^5
4.00 TeV	4.000×10^6	2.268	31.016	41.331	1.463	76.080	2.154×10^5
8.00 TeV	8.000×10^6	2.331	63.297	83.988	3.037	152.655	2.517×10^5
10.0 TeV	1.000×10^7	2.352	79.555	105.427	3.845	191.181	2.634×10^5
14.0 TeV	1.400×10^7	2.383	111.984	148.207	5.502	268.078	2.810×10^5
20.0 TeV	2.000×10^7	2.417	160.896	212.646	8.040	384.001	2.996×10^5
30.0 TeV	3.000×10^7	2.456	242.322	319.853	12.424	577.058	3.207×10^5
40.0 TeV	4.000×10^7	2.485	324.022	427.307	16.909	770.725	3.357×10^5
80.0 TeV	8.000×10^7	2.554	651.248	857.409	35.621	1546.835	3.716×10^5
100. TeV	1.000×10^8	2.577	815.110	1072.650	45.280	1935.619	3.831×10^5