

Muons in samarium (Sm)

Z	A [g/mol]	ρ [g/cm ³]	I [eV]	a	$k = m_s$	x_0	x_1	\bar{C}	δ_0
62 (Sm)	150.36(2)	7.520	574.0	0.24698	2.6403	0.1503	3.3443	5.8517	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	4.306				4.306	1.330×10^0		
14.0 MeV	5.616×10^1	3.414				3.414	2.383×10^0		
20.0 MeV	6.802×10^1	2.705				2.705	4.379×10^0		
30.0 MeV	8.509×10^1	2.127				2.127	8.602×10^0		
40.0 MeV	1.003×10^2	1.831				1.831	1.370×10^1		
80.0 MeV	1.527×10^2	1.397				1.397	3.946×10^1		
100. MeV	1.764×10^2	1.321				1.321	5.422×10^1		
140. MeV	2.218×10^2	1.248				1.248	8.550×10^1		
200. MeV	2.868×10^2	1.214				1.214	1.344×10^2		
240. MeV	3.294×10^2	1.210	0.000			1.211	<i>Minimum ionization</i>		
300. MeV	3.917×10^2	1.215	0.000		0.000	1.216	2.169×10^2		
400. MeV	4.945×10^2	1.235	0.000		0.000	1.235	2.985×10^2		
800. MeV	8.995×10^2	1.319	0.001		0.000	1.321	6.113×10^2		
1.00 GeV	1.101×10^3	1.353	0.001		0.000	1.355	7.607×10^2		
1.40 GeV	1.502×10^3	1.407	0.002	0.000	0.001	1.410	1.050×10^3		
2.00 GeV	2.103×10^3	1.465	0.003	0.001	0.001	1.470	1.466×10^3		
3.00 GeV	3.104×10^3	1.531	0.006	0.003	0.001	1.541	2.129×10^3		
4.00 GeV	4.104×10^3	1.576	0.008	0.006	0.002	1.592	2.767×10^3		
8.00 GeV	8.105×10^3	1.679	0.020	0.019	0.003	1.722	5.173×10^3		
10.0 GeV	1.011×10^4	1.710	0.027	0.027	0.004	1.768	6.319×10^3		
14.0 GeV	1.411×10^4	1.754	0.041	0.044	0.005	1.845	8.531×10^3		
20.0 GeV	2.011×10^4	1.798	0.064	0.072	0.007	1.942	1.170×10^4		
30.0 GeV	3.011×10^4	1.845	0.105	0.125	0.011	2.086	1.666×10^4		
40.0 GeV	4.011×10^4	1.876	0.148	0.184	0.015	2.222	2.131×10^4		
80.0 GeV	8.011×10^4	1.943	0.334	0.441	0.029	2.748	3.746×10^4		
100. GeV	1.001×10^5	1.964	0.432	0.580	0.035	3.013	4.440×10^4		
140. GeV	1.401×10^5	1.993	0.635	0.867	0.049	3.545	5.663×10^4		
175. GeV	1.755×10^5	2.013	0.820	1.131	0.062	4.027	<i>Muon critical energy</i>		
200. GeV	2.001×10^5	2.024	0.951	1.320	0.070	4.366	7.186×10^4		
300. GeV	3.001×10^5	2.058	1.492	2.077	0.105	5.733	9.180×10^4		
400. GeV	4.001×10^5	2.083	2.050	2.861	0.140	7.135	1.074×10^5		
800. GeV	8.001×10^5	2.142	4.356	6.076	0.284	12.858	1.486×10^5		
1.00 TeV	1.000×10^6	2.161	5.540	7.721	0.357	15.779	1.626×10^5		
1.40 TeV	1.400×10^6	2.190	7.912	11.001	0.505	21.610	1.842×10^5		
2.00 TeV	2.000×10^6	2.221	11.541	16.006	0.730	30.500	2.075×10^5		
3.00 TeV	3.000×10^6	2.257	17.598	24.323	1.116	45.296	2.342×10^5		
4.00 TeV	4.000×10^6	2.283	23.735	32.728	1.508	60.256	2.533×10^5		
8.00 TeV	8.000×10^6	2.347	48.472	66.511	3.133	120.465	2.993×10^5		
10.0 TeV	1.000×10^7	2.368	60.936	83.491	3.967	150.764	3.141×10^5		
14.0 TeV	1.400×10^7	2.401	85.796	117.374	5.678	211.250	3.364×10^5		
20.0 TeV	2.000×10^7	2.435	123.300	168.414	8.300	302.451	3.601×10^5		
30.0 TeV	3.000×10^7	2.475	185.736	253.335	12.830	454.377	3.869×10^5		
40.0 TeV	4.000×10^7	2.504	248.391	338.456	17.465	606.818	4.058×10^5		
80.0 TeV	8.000×10^7	2.575	499.374	679.164	36.812	1217.926	4.514×10^5		
100. TeV	1.000×10^8	2.598	625.070	849.670	46.800	1524.140	4.661×10^5		