

Muons in europium (Eu)

Z	A [g/mol]	ρ [g/cm ³]	I [eV]	a	$k = m_s$	x_0	x_1	\bar{C}	δ_0
63 (Eu)	151.964(1)	5.244	580.0	0.24448	2.6245	0.1888	3.4633	6.2276	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	4.322				4.322	1.326×10^0		
14.0 MeV	5.616×10^1	3.427				3.427	2.375×10^0		
20.0 MeV	6.802×10^1	2.716				2.716	4.363×10^0		
30.0 MeV	8.509×10^1	2.136				2.136	8.568×10^0		
40.0 MeV	1.003×10^2	1.840				1.840	1.364×10^1		
80.0 MeV	1.527×10^2	1.404				1.404	3.928×10^1		
100. MeV	1.764×10^2	1.328				1.328	5.396×10^1		
140. MeV	2.218×10^2	1.255				1.256	8.508×10^1		
200. MeV	2.868×10^2	1.222				1.222	1.337×10^2		
237. MeV	3.260×10^2	1.219	0.000			1.219	<i>Minimum ionization</i>		
300. MeV	3.917×10^2	1.224	0.000		0.000	1.225	2.156×10^2		
400. MeV	4.945×10^2	1.245	0.000		0.000	1.245	2.966×10^2		
800. MeV	8.995×10^2	1.332	0.001		0.000	1.333	6.066×10^2		
1.00 GeV	1.101×10^3	1.367	0.001		0.000	1.368	7.546×10^2		
1.40 GeV	1.502×10^3	1.422	0.002	0.000	0.001	1.425	1.041×10^3		
2.00 GeV	2.103×10^3	1.481	0.003	0.001	0.001	1.487	1.453×10^3		
3.00 GeV	3.104×10^3	1.549	0.006	0.003	0.001	1.560	2.108×10^3		
4.00 GeV	4.104×10^3	1.596	0.008	0.006	0.002	1.612	2.738×10^3		
8.00 GeV	8.105×10^3	1.702	0.021	0.019	0.003	1.746	5.113×10^3		
10.0 GeV	1.011×10^4	1.734	0.027	0.027	0.004	1.793	6.243×10^3		
14.0 GeV	1.411×10^4	1.780	0.042	0.044	0.005	1.872	8.424×10^3		
20.0 GeV	2.011×10^4	1.825	0.065	0.073	0.007	1.971	1.155×10^4		
30.0 GeV	3.011×10^4	1.873	0.107	0.127	0.011	2.119	1.643×10^4		
40.0 GeV	4.011×10^4	1.905	0.151	0.187	0.015	2.258	2.100×10^4		
80.0 GeV	8.011×10^4	1.975	0.341	0.450	0.029	2.795	3.689×10^4		
100. GeV	1.001×10^5	1.996	0.441	0.591	0.035	3.065	4.372×10^4		
140. GeV	1.401×10^5	2.026	0.648	0.883	0.049	3.607	5.574×10^4		
175. GeV	1.752×10^5	2.046	0.835	1.150	0.061	4.093	<i>Muon critical energy</i>		
200. GeV	2.001×10^5	2.057	0.971	1.344	0.070	4.444	7.071×10^4		
300. GeV	3.001×10^5	2.092	1.522	2.116	0.105	5.836	9.030×10^4		
400. GeV	4.001×10^5	2.116	2.092	2.915	0.140	7.265	1.056×10^5		
800. GeV	8.001×10^5	2.176	4.445	6.190	0.283	13.095	1.461×10^5		
1.00 TeV	1.000×10^6	2.195	5.653	7.865	0.356	16.071	1.599×10^5		
1.40 TeV	1.400×10^6	2.224	8.074	11.207	0.504	22.011	1.810×10^5		
2.00 TeV	2.000×10^6	2.256	11.776	16.305	0.730	31.069	2.039×10^5		
3.00 TeV	3.000×10^6	2.292	17.956	24.778	1.115	46.143	2.301×10^5		
4.00 TeV	4.000×10^6	2.318	24.217	33.340	1.507	61.385	2.489×10^5		
8.00 TeV	8.000×10^6	2.383	49.455	67.755	3.130	122.724	2.940×10^5		
10.0 TeV	1.000×10^7	2.404	62.171	85.052	3.963	153.591	3.086×10^5		
14.0 TeV	1.400×10^7	2.436	87.533	119.569	5.673	215.213	3.305×10^5		
20.0 TeV	2.000×10^7	2.471	125.796	171.564	8.292	308.124	3.537×10^5		
30.0 TeV	3.000×10^7	2.511	189.493	258.070	12.816	462.892	3.800×10^5		
40.0 TeV	4.000×10^7	2.540	253.414	344.777	17.446	618.179	3.986×10^5		
80.0 TeV	8.000×10^7	2.612	509.465	691.842	36.772	1240.691	4.434×10^5		
100. TeV	1.000×10^8	2.635	637.700	865.530	46.750	1552.617	4.577×10^5		