

**Table 317: Muons in Element 113**

Z	A [g/mol]	$\rho$ [g/cm <sup>3</sup> ]	I [eV]	$a$	$k = m_s$	$x_0$	$x_1$	$\bar{C}$	$\delta_0$
113 ( )	[284.]	??	1171.0	0.28517	3.0000	0.6818	3.0000	6.6925	0.00
$T$	$p$ [MeV/c]	Ionization	Brems	Pair prod [MeV cm <sup>2</sup> /g]	Photonucl	Total	CSDA range [g/cm <sup>2</sup> ]		
10.0 MeV	$4.704 \times 10^1$	3.490				3.490	$1.714 \times 10^0$		
14.0 MeV	$5.616 \times 10^1$	2.823				2.823	$2.999 \times 10^0$		
20.0 MeV	$6.802 \times 10^1$	2.275				2.275	$5.389 \times 10^0$		
30.0 MeV	$8.509 \times 10^1$	1.816				1.816	$1.037 \times 10^1$		
40.0 MeV	$1.003 \times 10^2$	1.578				1.578	$1.631 \times 10^1$		
80.0 MeV	$1.527 \times 10^2$	1.227				1.227	$4.587 \times 10^1$		
100. MeV	$1.764 \times 10^2$	1.167				1.167	$6.262 \times 10^1$		
140. MeV	$2.218 \times 10^2$	1.111				1.111	$9.790 \times 10^1$		
200. MeV	$2.868 \times 10^2$	1.091	0.000			1.092	$1.525 \times 10^2$		
207. MeV	$2.943 \times 10^2$	1.091	0.000			1.092	<i>Minimum ionization</i>		
300. MeV	$3.917 \times 10^2$	1.106	0.000		0.000	1.107	$2.437 \times 10^2$		
400. MeV	$4.945 \times 10^2$	1.134	0.000		0.000	1.135	$3.330 \times 10^2$		
800. MeV	$8.995 \times 10^2$	1.236	0.001		0.000	1.238	$6.693 \times 10^2$		
1.00 GeV	$1.101 \times 10^3$	1.273	0.002		0.000	1.276	$8.284 \times 10^2$		
1.40 GeV	$1.502 \times 10^3$	1.331	0.003		0.000	1.335	$1.134 \times 10^3$		
2.00 GeV	$2.103 \times 10^3$	1.391	0.005	0.000	0.001	1.398	$1.573 \times 10^3$		
3.00 GeV	$3.104 \times 10^3$	1.457	0.009	0.003	0.001	1.471	$2.269 \times 10^3$		
4.00 GeV	$4.104 \times 10^3$	1.502	0.014	0.006	0.001	1.524	$2.937 \times 10^3$		
8.00 GeV	$8.105 \times 10^3$	1.600	0.034	0.025	0.003	1.663	$5.440 \times 10^3$		
10.0 GeV	$1.011 \times 10^4$	1.629	0.045	0.036	0.004	1.715	$6.624 \times 10^3$		
14.0 GeV	$1.411 \times 10^4$	1.670	0.068	0.061	0.005	1.805	$8.895 \times 10^3$		
20.0 GeV	$2.011 \times 10^4$	1.710	0.107	0.101	0.007	1.926	$1.211 \times 10^4$		
30.0 GeV	$3.011 \times 10^4$	1.752	0.175	0.182	0.010	2.120	$1.706 \times 10^4$		
40.0 GeV	$4.011 \times 10^4$	1.779	0.247	0.270	0.014	2.312	$2.157 \times 10^4$		
80.0 GeV	$8.011 \times 10^4$	1.840	0.559	0.663	0.027	3.091	$3.649 \times 10^4$		
100. GeV	$1.001 \times 10^5$	1.859	0.724	0.876	0.033	3.495	$4.258 \times 10^4$		
112. GeV	$1.122 \times 10^5$	1.869	0.826	1.006	0.037	3.739	<i>Muon critical energy</i>		
140. GeV	$1.401 \times 10^5$	1.887	1.063	1.314	0.047	4.312	$5.287 \times 10^4$		
200. GeV	$2.001 \times 10^5$	1.916	1.593	2.009	0.066	5.586	$6.507 \times 10^4$		
300. GeV	$3.001 \times 10^5$	1.949	2.496	3.169	0.099	7.715	$8.025 \times 10^4$		
400. GeV	$4.001 \times 10^5$	1.973	3.428	4.372	0.133	9.907	$9.167 \times 10^4$		
800. GeV	$8.001 \times 10^5$	2.029	7.273	9.305	0.268	18.877	$1.204 \times 10^5$		
1.00 TeV	$1.000 \times 10^6$	2.048	9.245	11.829	0.336	23.460	$1.299 \times 10^5$		
1.40 TeV	$1.400 \times 10^6$	2.076	13.194	16.860	0.476	32.608	$1.443 \times 10^5$		
2.00 TeV	$2.000 \times 10^6$	2.106	19.228	24.539	0.689	46.564	$1.597 \times 10^5$		
3.00 TeV	$3.000 \times 10^6$	2.141	29.292	37.295	1.053	69.783	$1.771 \times 10^5$		
4.00 TeV	$4.000 \times 10^6$	2.166	39.482	50.188	1.422	93.260	$1.894 \times 10^5$		
8.00 TeV	$8.000 \times 10^6$	2.228	80.524	102.002	2.951	187.707	$2.191 \times 10^5$		
10.0 TeV	$1.000 \times 10^7$	2.248	101.189	128.044	3.735	235.219	$2.286 \times 10^5$		
14.0 TeV	$1.400 \times 10^7$	2.279	142.407	180.009	5.343	330.040	$2.429 \times 10^5$		
20.0 TeV	$2.000 \times 10^7$	2.313	204.562	258.286	7.806	472.969	$2.580 \times 10^5$		
30.0 TeV	$3.000 \times 10^7$	2.351	308.136	388.503	12.059	711.052	$2.751 \times 10^5$		
40.0 TeV	$4.000 \times 10^7$	2.379	412.071	519.020	16.411	949.883	$2.872 \times 10^5$		
80.0 TeV	$8.000 \times 10^7$	2.447	827.765	1041.439	34.562	1906.216	$3.164 \times 10^5$		
100. TeV	$1.000 \times 10^8$	2.470	1035.730	1302.880	43.930	2385.012	$3.257 \times 10^5$		