

Muons in manganese (Mn)

Z	A [g/mol]	$\rho$ [g/cm <sup>3</sup> ]	I [eV]	$a$	$k = m_s$	$x_0$	$x_1$	$\bar{C}$	$\delta_0$
25 (Mn)	54.938044(3)	7.440	272.0	0.14973	2.9796	0.0447	3.1074	4.2702	0.14

  

$T$	$p$ [MeV/c]	Ionization	Brems	Pair prod [MeV cm <sup>2</sup> /g]	Photonucl	Total	CSDA range [g/cm <sup>2</sup> ]
10.0 MeV	$4.704 \times 10^1$	5.414				5.414	$1.039 \times 10^0$
14.0 MeV	$5.616 \times 10^1$	4.257				4.257	$1.881 \times 10^0$
20.0 MeV	$6.802 \times 10^1$	3.347				3.347	$3.488 \times 10^0$
30.0 MeV	$8.509 \times 10^1$	2.613				2.613	$6.915 \times 10^0$
40.0 MeV	$1.003 \times 10^2$	2.239				2.239	$1.108 \times 10^1$
80.0 MeV	$1.527 \times 10^2$	1.689				1.689	$3.229 \times 10^1$
100. MeV	$1.764 \times 10^2$	1.590				1.590	$4.452 \times 10^1$
140. MeV	$2.218 \times 10^2$	1.491				1.492	$7.061 \times 10^1$
200. MeV	$2.868 \times 10^2$	1.440				1.440	$1.117 \times 10^2$
274. MeV	$3.642 \times 10^2$	1.428			0.000	1.428	<i>Minimum ionization</i>
300. MeV	$3.917 \times 10^2$	1.429			0.000	1.429	$1.816 \times 10^2$
400. MeV	$4.945 \times 10^2$	1.443	0.000		0.000	1.443	$2.513 \times 10^2$
800. MeV	$8.995 \times 10^2$	1.521	0.000		0.000	1.522	$5.210 \times 10^2$
1.00 GeV	$1.101 \times 10^3$	1.554	0.001		0.000	1.555	$6.509 \times 10^2$
1.40 GeV	$1.502 \times 10^3$	1.607	0.001	0.000	0.001	1.609	$9.036 \times 10^2$
2.00 GeV	$2.103 \times 10^3$	1.664	0.002	0.001	0.001	1.667	$1.270 \times 10^3$
3.00 GeV	$3.104 \times 10^3$	1.728	0.003	0.002	0.001	1.735	$1.857 \times 10^3$
4.00 GeV	$4.104 \times 10^3$	1.773	0.004	0.003	0.002	1.782	$2.425 \times 10^3$
8.00 GeV	$8.105 \times 10^3$	1.875	0.010	0.010	0.003	1.898	$4.592 \times 10^3$
10.0 GeV	$1.011 \times 10^4$	1.905	0.013	0.014	0.004	1.937	$5.635 \times 10^3$
14.0 GeV	$1.411 \times 10^4$	1.949	0.020	0.022	0.006	1.997	$7.667 \times 10^3$
20.0 GeV	$2.011 \times 10^4$	1.993	0.031	0.036	0.008	2.069	$1.062 \times 10^4$
30.0 GeV	$3.011 \times 10^4$	2.040	0.050	0.063	0.012	2.165	$1.534 \times 10^4$
40.0 GeV	$4.011 \times 10^4$	2.071	0.071	0.092	0.016	2.250	$1.987 \times 10^4$
80.0 GeV	$8.011 \times 10^4$	2.141	0.161	0.220	0.031	2.553	$3.653 \times 10^4$
100. GeV	$1.001 \times 10^5$	2.162	0.209	0.289	0.038	2.699	$4.414 \times 10^4$
140. GeV	$1.401 \times 10^5$	2.194	0.306	0.432	0.054	2.987	$5.823 \times 10^4$
200. GeV	$2.001 \times 10^5$	2.228	0.460	0.658	0.076	3.422	$7.698 \times 10^4$
300. GeV	$3.001 \times 10^5$	2.265	0.722	1.038	0.114	4.140	$1.035 \times 10^5$
358. GeV	$3.585 \times 10^5$	2.282	0.879	1.267	0.136	4.565	<i>Muon critical energy</i>
400. GeV	$4.001 \times 10^5$	2.292	0.993	1.432	0.152	4.870	$1.258 \times 10^5$
800. GeV	$8.001 \times 10^5$	2.357	2.115	3.051	0.307	7.832	$1.900 \times 10^5$
1.00 TeV	$1.000 \times 10^6$	2.378	2.693	3.881	0.386	9.339	$2.133 \times 10^5$
1.40 TeV	$1.400 \times 10^6$	2.411	3.852	5.537	0.547	12.348	$2.505 \times 10^5$
2.00 TeV	$2.000 \times 10^6$	2.445	5.627	8.067	0.792	16.932	$2.918 \times 10^5$
3.00 TeV	$3.000 \times 10^6$	2.485	8.593	12.272	1.212	24.564	$3.406 \times 10^5$
4.00 TeV	$4.000 \times 10^6$	2.514	11.603	16.525	1.639	32.282	$3.760 \times 10^5$
8.00 TeV	$8.000 \times 10^6$	2.584	23.751	33.630	3.410	63.377	$4.628 \times 10^5$
10.0 TeV	$1.000 \times 10^7$	2.608	29.878	42.233	4.321	79.040	$4.910 \times 10^5$
14.0 TeV	$1.400 \times 10^7$	2.643	42.101	59.394	6.192	110.331	$5.336 \times 10^5$
20.0 TeV	$2.000 \times 10^7$	2.681	60.556	85.254	9.062	157.554	$5.789 \times 10^5$
30.0 TeV	$3.000 \times 10^7$	2.725	91.279	128.281	14.027	236.313	$6.304 \times 10^5$
40.0 TeV	$4.000 \times 10^7$	2.757	122.126	171.419	19.113	315.416	$6.669 \times 10^5$
80.0 TeV	$8.000 \times 10^7$	2.836	245.739	344.102	40.383	633.061	$7.546 \times 10^5$
100. TeV	$1.000 \times 10^8$	2.861	307.670	430.530	51.380	792.442	$7.828 \times 10^5$