

## Muons in caesium (Cs)

Z	A [g/mol]	$\rho$ [g/cm <sup>3</sup> ]	I [eV]	a	$k = m_s$	$x_0$	$x_1$	$\bar{C}$	$\delta_0$
55 (Cs)	132.90545196(6)	1.873	488.0	0.18233	2.8866	0.5473	3.5914	6.9135	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	$4.704 \times 10^1$	4.464				4.464	$1.277 \times 10^0$		
14.0 MeV	$5.616 \times 10^1$	3.532				3.532	$2.294 \times 10^0$		
20.0 MeV	$6.802 \times 10^1$	2.794				2.794	$4.224 \times 10^0$		
30.0 MeV	$8.509 \times 10^1$	2.195				2.195	$8.315 \times 10^0$		
40.0 MeV	$1.003 \times 10^2$	1.890				1.890	$1.325 \times 10^1$		
80.0 MeV	$1.527 \times 10^2$	1.444				1.444	$3.820 \times 10^1$		
100. MeV	$1.764 \times 10^2$	1.366				1.366	$5.248 \times 10^1$		
140. MeV	$2.218 \times 10^2$	1.291				1.291	$8.274 \times 10^1$		
200. MeV	$2.868 \times 10^2$	1.257				1.257	$1.300 \times 10^2$		
236. MeV	$3.250 \times 10^2$	1.254				1.254	<i>Minimum ionization</i>		
300. MeV	$3.917 \times 10^2$	1.261	0.000		0.000	1.261	$2.096 \times 10^2$		
400. MeV	$4.945 \times 10^2$	1.284	0.000		0.000	1.285	$2.882 \times 10^2$		
800. MeV	$8.995 \times 10^2$	1.378	0.001		0.000	1.380	$5.881 \times 10^2$		
1.00 GeV	$1.101 \times 10^3$	1.415	0.001		0.000	1.417	$7.311 \times 10^2$		
1.40 GeV	$1.502 \times 10^3$	1.473	0.002	0.000	0.001	1.476	$1.007 \times 10^3$		
2.00 GeV	$2.103 \times 10^3$	1.535	0.003	0.001	0.001	1.540	$1.405 \times 10^3$		
3.00 GeV	$3.104 \times 10^3$	1.605	0.005	0.003	0.001	1.615	$2.038 \times 10^3$		
4.00 GeV	$4.104 \times 10^3$	1.653	0.007	0.006	0.002	1.668	$2.647 \times 10^3$		
8.00 GeV	$8.105 \times 10^3$	1.762	0.018	0.018	0.003	1.801	$4.945 \times 10^3$		
10.0 GeV	$1.011 \times 10^4$	1.794	0.024	0.025	0.004	1.847	$6.041 \times 10^3$		
14.0 GeV	$1.411 \times 10^4$	1.840	0.037	0.040	0.005	1.923	$8.161 \times 10^3$		
20.0 GeV	$2.011 \times 10^4$	1.886	0.057	0.065	0.008	2.017	$1.121 \times 10^4$		
30.0 GeV	$3.011 \times 10^4$	1.934	0.094	0.114	0.011	2.154	$1.600 \times 10^4$		
40.0 GeV	$4.011 \times 10^4$	1.966	0.133	0.167	0.015	2.282	$2.051 \times 10^4$		
80.0 GeV	$8.011 \times 10^4$	2.036	0.300	0.401	0.029	2.767	$3.639 \times 10^4$		
100. GeV	$1.001 \times 10^5$	2.057	0.389	0.527	0.036	3.010	$4.332 \times 10^4$		
140. GeV	$1.401 \times 10^5$	2.088	0.571	0.787	0.050	3.497	$5.564 \times 10^4$		
200. GeV	$1.996 \times 10^5$	2.119	0.853	1.195	0.071	4.239	<i>Muon critical energy</i>		
200. GeV	$2.001 \times 10^5$	2.119	0.855	1.199	0.071	4.245	$7.120 \times 10^4$		
300. GeV	$3.001 \times 10^5$	2.154	1.341	1.886	0.106	5.489	$9.187 \times 10^4$		
400. GeV	$4.001 \times 10^5$	2.178	1.844	2.598	0.142	6.763	$1.083 \times 10^5$		
800. GeV	$8.001 \times 10^5$	2.237	3.918	5.519	0.287	11.963	$1.522 \times 10^5$		
1.00 TeV	$1.000 \times 10^6$	2.257	4.984	7.013	0.360	14.615	$1.673 \times 10^5$		
1.40 TeV	$1.400 \times 10^6$	2.286	7.120	9.993	0.510	19.911	$1.906 \times 10^5$		
2.00 TeV	$2.000 \times 10^6$	2.317	10.388	14.540	0.738	27.985	$2.159 \times 10^5$		
3.00 TeV	$3.000 \times 10^6$	2.354	15.843	22.098	1.128	41.424	$2.451 \times 10^5$		
4.00 TeV	$4.000 \times 10^6$	2.380	21.371	29.735	1.525	55.011	$2.660 \times 10^5$		
8.00 TeV	$8.000 \times 10^6$	2.444	43.656	60.435	3.168	109.704	$3.165 \times 10^5$		
10.0 TeV	$1.000 \times 10^7$	2.465	54.886	75.866	4.011	137.230	$3.328 \times 10^5$		
14.0 TeV	$1.400 \times 10^7$	2.497	77.286	106.658	5.742	192.184	$3.573 \times 10^5$		
20.0 TeV	$2.000 \times 10^7$	2.532	111.082	153.042	8.396	275.053	$3.833 \times 10^5$		
30.0 TeV	$3.000 \times 10^7$	2.572	167.344	230.212	12.979	413.109	$4.127 \times 10^5$		
40.0 TeV	$4.000 \times 10^7$	2.601	223.807	307.564	17.670	551.643	$4.336 \times 10^5$		
80.0 TeV	$8.000 \times 10^7$	2.672	449.996	617.197	37.249	1107.116	$4.838 \times 10^5$		
100. TeV	$1.000 \times 10^8$	2.696	563.280	772.160	47.360	1385.497	$4.999 \times 10^5$		