

**Table 079: Muons in Gold**

Z	A [g/mol]	$\rho$ [g/cm <sup>3</sup> ]	I [eV]	a	$k = m_s$	$x_0$	$x_1$	$\bar{C}$	$\delta_0$
79 (Au)	196.966569 (4)	19.320	790.0	0.09756	3.1101	0.2021	3.6979	5.5747	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	$4.704 \times 10^1$	3.910				3.910	$1.486 \times 10^0$		
14.0 MeV	$5.616 \times 10^1$	3.120				3.120	$2.642 \times 10^0$		
20.0 MeV	$6.802 \times 10^1$	2.485				2.485	$4.819 \times 10^0$		
30.0 MeV	$8.509 \times 10^1$	1.964				1.964	$9.402 \times 10^0$		
40.0 MeV	$1.003 \times 10^2$	1.696				1.696	$1.491 \times 10^1$		
80.0 MeV	$1.527 \times 10^2$	1.302				1.302	$4.262 \times 10^1$		
100. MeV	$1.764 \times 10^2$	1.232				1.232	$5.845 \times 10^1$		
140. MeV	$2.218 \times 10^2$	1.166				1.166	$9.196 \times 10^1$		
200. MeV	$2.868 \times 10^2$	1.136				1.137	$1.442 \times 10^2$		
236. MeV	$3.250 \times 10^2$	1.134	0.000			1.134	<i>Minimum ionization</i>		
300. MeV	$3.917 \times 10^2$	1.139	0.000		0.000	1.140	$2.323 \times 10^2$		
400. MeV	$4.945 \times 10^2$	1.158	0.000		0.000	1.159	$3.194 \times 10^2$		
800. MeV	$8.995 \times 10^2$	1.240	0.001		0.000	1.241	$6.523 \times 10^2$		
1.00 GeV	$1.101 \times 10^3$	1.272	0.001		0.000	1.274	$8.113 \times 10^2$		
1.40 GeV	$1.502 \times 10^3$	1.323	0.002		0.001	1.326	$1.119 \times 10^3$		
2.00 GeV	$2.103 \times 10^3$	1.378	0.004	0.001	0.001	1.384	$1.561 \times 10^3$		
3.00 GeV	$3.104 \times 10^3$	1.440	0.007	0.003	0.001	1.452	$2.266 \times 10^3$		
4.00 GeV	$4.104 \times 10^3$	1.483	0.010	0.006	0.002	1.501	$2.943 \times 10^3$		
8.00 GeV	$8.105 \times 10^3$	1.580	0.025	0.022	0.003	1.630	$5.490 \times 10^3$		
10.0 GeV	$1.011 \times 10^4$	1.609	0.033	0.031	0.004	1.677	$6.699 \times 10^3$		
14.0 GeV	$1.411 \times 10^4$	1.651	0.050	0.050	0.005	1.757	$9.028 \times 10^3$		
20.0 GeV	$2.011 \times 10^4$	1.693	0.077	0.083	0.007	1.862	$1.234 \times 10^4$		
30.0 GeV	$3.011 \times 10^4$	1.737	0.127	0.146	0.011	2.022	$1.749 \times 10^4$		
40.0 GeV	$4.011 \times 10^4$	1.767	0.179	0.215	0.014	2.176	$2.226 \times 10^4$		
80.0 GeV	$8.011 \times 10^4$	1.833	0.405	0.520	0.028	2.787	$3.846 \times 10^4$		
100. GeV	$1.001 \times 10^5$	1.853	0.525	0.684	0.035	3.098	$4.527 \times 10^4$		
140. GeV	$1.401 \times 10^5$	1.882	0.771	1.022	0.048	3.724	$5.703 \times 10^4$		
143. GeV	$1.429 \times 10^5$	1.884	0.788	1.047	0.049	3.769	<i>Muon critical energy</i>		
200. GeV	$2.001 \times 10^5$	1.912	1.155	1.558	0.069	4.695	$7.136 \times 10^4$		
300. GeV	$3.001 \times 10^5$	1.946	1.810	2.453	0.103	6.314	$8.967 \times 10^4$		
400. GeV	$4.001 \times 10^5$	1.969	2.488	3.381	0.137	7.976	$1.037 \times 10^5$		
800. GeV	$8.001 \times 10^5$	2.027	5.282	7.182	0.277	14.770	$1.400 \times 10^5$		
1.00 TeV	$1.000 \times 10^6$	2.045	6.716	9.127	0.348	18.238	$1.522 \times 10^5$		
1.40 TeV	$1.400 \times 10^6$	2.074	9.590	13.004	0.493	25.162	$1.708 \times 10^5$		
2.00 TeV	$2.000 \times 10^6$	2.104	13.983	18.920	0.713	35.722	$1.907 \times 10^5$		
3.00 TeV	$3.000 \times 10^6$	2.139	21.314	28.750	1.089	53.294	$2.135 \times 10^5$		
4.00 TeV	$4.000 \times 10^6$	2.165	28.739	38.683	1.472	71.060	$2.297 \times 10^5$		
8.00 TeV	$8.000 \times 10^6$	2.227	58.660	78.606	3.055	142.551	$2.687 \times 10^5$		
10.0 TeV	$1.000 \times 10^7$	2.247	73.732	98.672	3.868	178.521	$2.812 \times 10^5$		
14.0 TeV	$1.400 \times 10^7$	2.279	103.793	138.710	5.535	250.319	$3.000 \times 10^5$		
20.0 TeV	$2.000 \times 10^7$	2.312	149.136	199.020	8.090	358.560	$3.199 \times 10^5$		
30.0 TeV	$3.000 \times 10^7$	2.351	224.621	299.358	12.501	538.834	$3.425 \times 10^5$		
40.0 TeV	$4.000 \times 10^7$	2.379	300.363	399.928	17.015	719.687	$3.585 \times 10^5$		
80.0 TeV	$8.000 \times 10^7$	2.448	603.732	802.482	35.848	1444.513	$3.970 \times 10^5$		
100. TeV	$1.000 \times 10^8$	2.471	755.650	1003.940	45.570	1807.633	$4.093 \times 10^5$		