

**Table 059: Muons in Praseodymium**

Z	A [g/mol]	$\rho$ [g/cm <sup>3</sup> ]	I [eV]	a	$k = m_s$	$x_0$	$x_1$	$\bar{C}$	$\delta_0$
59 (Pr)	140.90765 (2)	6.710	535.0	0.23265	2.7331	0.2333	3.2773	5.8096	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	$4.704 \times 10^1$	4.435				4.436	$1.288 \times 10^0$		
14.0 MeV	$5.616 \times 10^1$	3.513				3.513	$2.311 \times 10^0$		
20.0 MeV	$6.802 \times 10^1$	2.781				2.781	$4.251 \times 10^0$		
30.0 MeV	$8.509 \times 10^1$	2.186				2.186	$8.360 \times 10^0$		
40.0 MeV	$1.003 \times 10^2$	1.882				1.882	$1.332 \times 10^1$		
80.0 MeV	$1.527 \times 10^2$	1.436				1.436	$3.839 \times 10^1$		
100. MeV	$1.764 \times 10^2$	1.357				1.357	$5.275 \times 10^1$		
140. MeV	$2.218 \times 10^2$	1.282				1.282	$8.321 \times 10^1$		
200. MeV	$2.868 \times 10^2$	1.247				1.248	$1.308 \times 10^2$		
239. MeV	$3.285 \times 10^2$	1.244	0.000			1.244	<i>Minimum ionization</i>		
300. MeV	$3.917 \times 10^2$	1.249	0.000		0.000	1.249	$2.111 \times 10^2$		
400. MeV	$4.945 \times 10^2$	1.269	0.000		0.000	1.269	$2.906 \times 10^2$		
800. MeV	$8.995 \times 10^2$	1.355	0.001		0.000	1.356	$5.950 \times 10^2$		
1.00 GeV	$1.101 \times 10^3$	1.389	0.001		0.000	1.391	$7.406 \times 10^2$		
1.40 GeV	$1.502 \times 10^3$	1.444	0.002	0.000	0.001	1.447	$1.022 \times 10^3$		
2.00 GeV	$2.103 \times 10^3$	1.502	0.003	0.001	0.001	1.508	$1.428 \times 10^3$		
3.00 GeV	$3.104 \times 10^3$	1.569	0.005	0.003	0.001	1.579	$2.075 \times 10^3$		
4.00 GeV	$4.104 \times 10^3$	1.614	0.008	0.006	0.002	1.630	$2.698 \times 10^3$		
8.00 GeV	$8.105 \times 10^3$	1.717	0.020	0.019	0.003	1.760	$5.050 \times 10^3$		
10.0 GeV	$1.011 \times 10^4$	1.748	0.026	0.026	0.004	1.805	$6.172 \times 10^3$		
14.0 GeV	$1.411 \times 10^4$	1.793	0.040	0.043	0.005	1.881	$8.341 \times 10^3$		
20.0 GeV	$2.011 \times 10^4$	1.836	0.062	0.070	0.007	1.977	$1.145 \times 10^4$		
30.0 GeV	$3.011 \times 10^4$	1.883	0.102	0.122	0.011	2.118	$1.633 \times 10^4$		
40.0 GeV	$4.011 \times 10^4$	1.913	0.143	0.179	0.015	2.251	$2.091 \times 10^4$		
80.0 GeV	$8.011 \times 10^4$	1.981	0.324	0.430	0.029	2.765	$3.691 \times 10^4$		
100. GeV	$1.001 \times 10^5$	2.001	0.420	0.566	0.036	3.023	$4.383 \times 10^4$		
140. GeV	$1.401 \times 10^5$	2.031	0.616	0.845	0.050	3.543	$5.604 \times 10^4$		
183. GeV	$1.827 \times 10^5$	2.054	0.833	1.156	0.065	4.109	<i>Muon critical energy</i>		
200. GeV	$2.001 \times 10^5$	2.062	0.924	1.286	0.071	4.343	$7.132 \times 10^4$		
300. GeV	$3.001 \times 10^5$	2.096	1.448	2.024	0.106	5.676	$9.141 \times 10^4$		
400. GeV	$4.001 \times 10^5$	2.121	1.991	2.788	0.141	7.042	$1.072 \times 10^5$		
800. GeV	$8.001 \times 10^5$	2.181	4.229	5.922	0.285	12.619	$1.491 \times 10^5$		
1.00 TeV	$1.000 \times 10^6$	2.200	5.379	7.525	0.359	15.464	$1.634 \times 10^5$		
1.40 TeV	$1.400 \times 10^6$	2.230	7.684	10.722	0.508	21.145	$1.854 \times 10^5$		
2.00 TeV	$2.000 \times 10^6$	2.262	11.209	15.600	0.734	29.807	$2.092 \times 10^5$		
3.00 TeV	$3.000 \times 10^6$	2.299	17.093	23.707	1.123	44.223	$2.366 \times 10^5$		
4.00 TeV	$4.000 \times 10^6$	2.325	23.055	31.899	1.517	58.798	$2.561 \times 10^5$		
8.00 TeV	$8.000 \times 10^6$	2.390	47.088	64.830	3.151	117.461	$3.033 \times 10^5$		
10.0 TeV	$1.000 \times 10^7$	2.411	59.197	81.383	3.990	146.983	$3.185 \times 10^5$		
14.0 TeV	$1.400 \times 10^7$	2.444	83.351	114.411	5.712	205.919	$3.414 \times 10^5$		
20.0 TeV	$2.000 \times 10^7$	2.479	119.792	164.162	8.350	294.785	$3.656 \times 10^5$		
30.0 TeV	$3.000 \times 10^7$	2.520	180.457	246.940	12.907	442.825	$3.931 \times 10^5$		
40.0 TeV	$4.000 \times 10^7$	2.549	241.336	329.913	17.571	591.371	$4.126 \times 10^5$		
80.0 TeV	$8.000 \times 10^7$	2.621	485.210	662.036	37.038	1186.907	$4.594 \times 10^5$		
100. TeV	$1.000 \times 10^8$	2.645	607.350	828.250	47.090	1485.337	$4.744 \times 10^5$		