

**Table 179: Muons in Polyimide film (C<sub>22</sub>H<sub>10</sub>N<sub>2</sub>O<sub>5</sub>)<sub>n</sub>**

$\langle Z/A \rangle$	$\rho$ [g/cm <sup>3</sup> ]	$I$ [eV]	$a$	$k = m_s$	$x_0$	$x_1$	$\bar{C}$	$\delta_0$
0.51264	1.420	79.6	0.15972	3.1921	0.1509	2.5631	3.3497	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	$4.704 \times 10^1$	7.299				7.299	$7.576 \times 10^{-1}$	
14.0 MeV	$5.616 \times 10^1$	5.695				5.695	$1.385 \times 10^0$	
20.0 MeV	$6.802 \times 10^1$	4.449				4.449	$2.590 \times 10^0$	
30.0 MeV	$8.509 \times 10^1$	3.453				3.453	$5.177 \times 10^0$	
40.0 MeV	$1.003 \times 10^2$	2.949				2.949	$8.332 \times 10^0$	
80.0 MeV	$1.527 \times 10^2$	2.214				2.214	$2.448 \times 10^1$	
100. MeV	$1.764 \times 10^2$	2.074				2.074	$3.384 \times 10^1$	
140. MeV	$2.218 \times 10^2$	1.932				1.932	$5.392 \times 10^1$	
200. MeV	$2.868 \times 10^2$	1.851				1.851	$8.577 \times 10^1$	
300. MeV	$3.917 \times 10^2$	1.820			0.000	1.820	$1.404 \times 10^2$	
314. MeV	$4.065 \times 10^2$	1.820			0.000	1.820	<i>Minimum ionization</i>	
400. MeV	$4.945 \times 10^2$	1.826			0.000	1.827	$1.953 \times 10^2$	
800. MeV	$8.995 \times 10^2$	1.897	0.000		0.000	1.898	$4.102 \times 10^2$	
1.00 GeV	$1.101 \times 10^3$	1.929	0.000		0.000	1.930	$5.147 \times 10^2$	
1.40 GeV	$1.502 \times 10^3$	1.981	0.000		0.001	1.982	$7.191 \times 10^2$	
2.00 GeV	$2.103 \times 10^3$	2.038	0.001	0.000	0.001	2.040	$1.017 \times 10^3$	
3.00 GeV	$3.104 \times 10^3$	2.103	0.001	0.001	0.001	2.106	$1.499 \times 10^3$	
4.00 GeV	$4.104 \times 10^3$	2.148	0.001	0.001	0.002	2.152	$1.969 \times 10^3$	
8.00 GeV	$8.105 \times 10^3$	2.251	0.003	0.003	0.004	2.261	$3.776 \times 10^3$	
10.0 GeV	$1.011 \times 10^4$	2.282	0.004	0.004	0.005	2.295	$4.654 \times 10^3$	
14.0 GeV	$1.411 \times 10^4$	2.327	0.006	0.007	0.007	2.347	$6.376 \times 10^3$	
20.0 GeV	$2.011 \times 10^4$	2.373	0.010	0.011	0.009	2.403	$8.901 \times 10^3$	
30.0 GeV	$3.011 \times 10^4$	2.422	0.017	0.020	0.013	2.472	$1.300 \times 10^4$	
40.0 GeV	$4.011 \times 10^4$	2.455	0.023	0.029	0.018	2.526	$1.700 \times 10^4$	
80.0 GeV	$8.011 \times 10^4$	2.533	0.053	0.072	0.034	2.692	$3.231 \times 10^4$	
100. GeV	$1.001 \times 10^5$	2.557	0.069	0.094	0.042	2.763	$3.964 \times 10^4$	
140. GeV	$1.401 \times 10^5$	2.593	0.102	0.142	0.059	2.896	$5.378 \times 10^4$	
200. GeV	$2.001 \times 10^5$	2.630	0.154	0.217	0.084	3.085	$7.385 \times 10^4$	
300. GeV	$3.001 \times 10^5$	2.673	0.242	0.345	0.125	3.386	$1.048 \times 10^5$	
400. GeV	$4.001 \times 10^5$	2.703	0.335	0.479	0.167	3.684	$1.331 \times 10^5$	
800. GeV	$8.001 \times 10^5$	2.776	0.719	1.035	0.337	4.868	$2.272 \times 10^5$	
1.00 TeV	$1.000 \times 10^6$	2.800	0.917	1.323	0.424	5.465	$2.660 \times 10^5$	
1.05 TeV	$1.050 \times 10^6$	2.806	0.966	1.393	0.446	5.611	<i>Muon critical energy</i>	
1.40 TeV	$1.400 \times 10^6$	2.837	1.317	1.896	0.601	6.651	$3.322 \times 10^5$	
2.00 TeV	$2.000 \times 10^6$	2.876	1.932	2.773	0.870	8.451	$4.121 \times 10^5$	
3.00 TeV	$3.000 \times 10^6$	2.921	2.962	4.235	1.334	11.451	$5.134 \times 10^5$	
4.00 TeV	$4.000 \times 10^6$	2.953	4.010	5.717	1.805	14.485	$5.909 \times 10^5$	
8.00 TeV	$8.000 \times 10^6$	3.032	8.253	11.688	3.768	26.742	$7.910 \times 10^5$	
10.0 TeV	$1.000 \times 10^7$	3.059	10.399	14.695	4.779	32.932	$8.583 \times 10^5$	
14.0 TeV	$1.400 \times 10^7$	3.099	14.682	20.687	6.862	45.330	$9.614 \times 10^5$	
20.0 TeV	$2.000 \times 10^7$	3.141	21.159	29.726	10.063	64.090	$1.072 \times 10^6$	
30.0 TeV	$3.000 \times 10^7$	3.191	31.945	44.764	15.620	95.520	$1.199 \times 10^6$	
40.0 TeV	$4.000 \times 10^7$	3.227	42.788	59.852	21.322	127.189	$1.290 \times 10^6$	
80.0 TeV	$8.000 \times 10^7$	3.315	86.250	120.255	45.255	255.076	$1.507 \times 10^6$	
100. TeV	$1.000 \times 10^8$	3.345	108.033	150.493	57.661	319.532	$1.577 \times 10^6$	