

**Table 223: Muons in Polymethylmethacrylate (acrylic,  $[\text{CH}_2\text{C}(\text{CH}_3)(\text{COOCH}_3)]_n$ )**

	$\langle Z/A \rangle$	$\rho$ [g/cm <sup>3</sup> ]	$I$ [eV]	$a$	$k = m_s$	$x_0$	$x_1$	$\bar{C}$	$\delta_0$
	0.53937	1.190	74.0	0.11433	3.3836	0.1824	2.6681	3.3297	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	$4.704 \times 10^1$	7.753				7.753	$7.128 \times 10^{-1}$		
14.0 MeV	$5.616 \times 10^1$	6.047				6.047	$1.303 \times 10^0$		
20.0 MeV	$6.802 \times 10^1$	4.722				4.722	$2.439 \times 10^0$		
30.0 MeV	$8.509 \times 10^1$	3.663				3.663	$4.877 \times 10^0$		
40.0 MeV	$1.003 \times 10^2$	3.128				3.128	$7.850 \times 10^0$		
80.0 MeV	$1.527 \times 10^2$	2.348				2.348	$2.308 \times 10^1$		
100. MeV	$1.764 \times 10^2$	2.203				2.203	$3.189 \times 10^1$		
140. MeV	$2.218 \times 10^2$	2.051				2.051	$5.080 \times 10^1$		
200. MeV	$2.868 \times 10^2$	1.963				1.964	$8.082 \times 10^1$		
300. MeV	$3.917 \times 10^2$	1.930			0.000	1.930	$1.323 \times 10^2$		
318. MeV	$4.105 \times 10^2$	1.929			0.000	1.930	<i>Minimum ionization</i>		
400. MeV	$4.945 \times 10^2$	1.936			0.000	1.936	$1.841 \times 10^2$		
800. MeV	$8.995 \times 10^2$	2.008	0.000		0.000	2.009	$3.870 \times 10^2$		
1.00 GeV	$1.101 \times 10^3$	2.042	0.000		0.000	2.042	$4.857 \times 10^2$		
1.40 GeV	$1.502 \times 10^3$	2.096	0.000		0.001	2.097	$6.789 \times 10^2$		
2.00 GeV	$2.103 \times 10^3$	2.155	0.001	0.000	0.001	2.157	$9.608 \times 10^2$		
3.00 GeV	$3.104 \times 10^3$	2.223	0.001	0.001	0.001	2.226	$1.417 \times 10^3$		
4.00 GeV	$4.104 \times 10^3$	2.270	0.001	0.001	0.002	2.275	$1.861 \times 10^3$		
8.00 GeV	$8.105 \times 10^3$	2.378	0.003	0.003	0.004	2.388	$3.572 \times 10^3$		
10.0 GeV	$1.011 \times 10^4$	2.411	0.004	0.004	0.005	2.424	$4.403 \times 10^3$		
14.0 GeV	$1.411 \times 10^4$	2.459	0.006	0.007	0.007	2.479	$6.033 \times 10^3$		
20.0 GeV	$2.011 \times 10^4$	2.507	0.010	0.011	0.009	2.537	$8.424 \times 10^3$		
30.0 GeV	$3.011 \times 10^4$	2.559	0.016	0.020	0.014	2.609	$1.231 \times 10^4$		
40.0 GeV	$4.011 \times 10^4$	2.594	0.023	0.029	0.018	2.665	$1.610 \times 10^4$		
80.0 GeV	$8.011 \times 10^4$	2.675	0.053	0.071	0.034	2.834	$3.063 \times 10^4$		
100. GeV	$1.001 \times 10^5$	2.701	0.069	0.094	0.043	2.907	$3.760 \times 10^4$		
140. GeV	$1.401 \times 10^5$	2.738	0.102	0.141	0.059	3.041	$5.105 \times 10^4$		
200. GeV	$2.001 \times 10^5$	2.778	0.153	0.217	0.084	3.232	$7.018 \times 10^4$		
300. GeV	$3.001 \times 10^5$	2.823	0.242	0.345	0.126	3.535	$9.975 \times 10^4$		
400. GeV	$4.001 \times 10^5$	2.855	0.334	0.478	0.168	3.835	$1.269 \times 10^5$		
800. GeV	$8.001 \times 10^5$	2.932	0.718	1.034	0.339	5.023	$2.178 \times 10^5$		
1.00 TeV	$1.000 \times 10^6$	2.957	0.917	1.321	0.426	5.621	$2.554 \times 10^5$		
1.11 TeV	$1.107 \times 10^6$	2.968	1.023	1.473	0.473	5.937	<i>Muon critical energy</i>		
1.40 TeV	$1.400 \times 10^6$	2.995	1.317	1.893	0.604	6.809	$3.200 \times 10^5$		
2.00 TeV	$2.000 \times 10^6$	3.036	1.932	2.770	0.874	8.612	$3.981 \times 10^5$		
3.00 TeV	$3.000 \times 10^6$	3.083	2.963	4.230	1.340	11.617	$4.978 \times 10^5$		
4.00 TeV	$4.000 \times 10^6$	3.117	4.012	5.711	1.813	14.655	$5.743 \times 10^5$		
8.00 TeV	$8.000 \times 10^6$	3.201	8.263	11.678	3.786	26.928	$7.726 \times 10^5$		
10.0 TeV	$1.000 \times 10^7$	3.229	10.413	14.684	4.802	33.128	$8.395 \times 10^5$		
14.0 TeV	$1.400 \times 10^7$	3.270	14.705	20.672	6.896	45.544	$9.421 \times 10^5$		
20.0 TeV	$2.000 \times 10^7$	3.316	21.198	29.706	10.114	64.334	$1.052 \times 10^6$		
30.0 TeV	$3.000 \times 10^7$	3.368	32.010	44.735	15.700	95.814	$1.179 \times 10^6$		
40.0 TeV	$4.000 \times 10^7$	3.406	42.882	59.813	21.435	127.537	$1.269 \times 10^6$		
80.0 TeV	$8.000 \times 10^7$	3.499	86.470	120.180	45.508	255.658	$1.486 \times 10^6$		
100. TeV	$1.000 \times 10^8$	3.529	108.321	150.400	57.990	320.240	$1.556 \times 10^6$		