

**Table 216: Muons in Polyvinyltoluene ( $[2\text{-CH}_3\text{C}_6\text{H}_4\text{CHCH}_2]_n$ )**

$\langle Z/A \rangle$	$\rho$ [g/cm <sup>3</sup> ]	$I$ [eV]	$a$	$k = m_s$	$x_0$	$x_1$	$\bar{C}$	$\delta_0$
0.54141	1.032	64.7	0.16101	3.2393	0.1464	2.4855	3.1997	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	$4.704 \times 10^1$	7.917				7.917	$6.971 \times 10^{-1}$	
14.0 MeV	$5.616 \times 10^1$	6.171				6.171	$1.275 \times 10^0$	
20.0 MeV	$6.802 \times 10^1$	4.816				4.816	$2.389 \times 10^0$	
30.0 MeV	$8.509 \times 10^1$	3.734				3.734	$4.780 \times 10^0$	
40.0 MeV	$1.003 \times 10^2$	3.187				3.187	$7.698 \times 10^0$	
80.0 MeV	$1.527 \times 10^2$	2.388				2.388	$2.266 \times 10^1$	
100. MeV	$1.764 \times 10^2$	2.237				2.237	$3.133 \times 10^1$	
140. MeV	$2.218 \times 10^2$	2.082				2.082	$4.996 \times 10^1$	
200. MeV	$2.868 \times 10^2$	1.992				1.992	$7.954 \times 10^1$	
300. MeV	$3.917 \times 10^2$	1.957			0.000	1.957	$1.303 \times 10^2$	
325. MeV	$4.171 \times 10^2$	1.956			0.000	1.956	<i>Minimum ionization</i>	
400. MeV	$4.945 \times 10^2$	1.962			0.000	1.962	$1.814 \times 10^2$	
800. MeV	$8.995 \times 10^2$	2.033	0.000		0.000	2.034	$3.817 \times 10^2$	
1.00 GeV	$1.101 \times 10^3$	2.066	0.000		0.000	2.067	$4.792 \times 10^2$	
1.40 GeV	$1.502 \times 10^3$	2.120	0.000		0.001	2.121	$6.702 \times 10^2$	
2.00 GeV	$2.103 \times 10^3$	2.179	0.000	0.000	0.001	2.181	$9.489 \times 10^2$	
3.00 GeV	$3.104 \times 10^3$	2.246	0.001	0.001	0.001	2.249	$1.400 \times 10^3$	
4.00 GeV	$4.104 \times 10^3$	2.293	0.001	0.001	0.002	2.297	$1.840 \times 10^3$	
8.00 GeV	$8.105 \times 10^3$	2.400	0.003	0.003	0.004	2.410	$3.534 \times 10^3$	
10.0 GeV	$1.011 \times 10^4$	2.433	0.004	0.004	0.005	2.445	$4.358 \times 10^3$	
14.0 GeV	$1.411 \times 10^4$	2.480	0.006	0.006	0.007	2.499	$5.975 \times 10^3$	
20.0 GeV	$2.011 \times 10^4$	2.528	0.009	0.010	0.009	2.557	$8.347 \times 10^3$	
30.0 GeV	$3.011 \times 10^4$	2.580	0.015	0.018	0.014	2.627	$1.220 \times 10^4$	
40.0 GeV	$4.011 \times 10^4$	2.615	0.021	0.027	0.018	2.681	$1.597 \times 10^4$	
80.0 GeV	$8.011 \times 10^4$	2.697	0.048	0.065	0.035	2.845	$3.043 \times 10^4$	
100. GeV	$1.001 \times 10^5$	2.722	0.063	0.086	0.043	2.914	$3.737 \times 10^4$	
140. GeV	$1.401 \times 10^5$	2.760	0.093	0.129	0.060	3.042	$5.080 \times 10^4$	
200. GeV	$2.001 \times 10^5$	2.800	0.140	0.198	0.084	3.223	$6.995 \times 10^4$	
300. GeV	$3.001 \times 10^5$	2.845	0.222	0.315	0.126	3.509	$9.968 \times 10^4$	
400. GeV	$4.001 \times 10^5$	2.877	0.306	0.438	0.169	3.789	$1.271 \times 10^5$	
800. GeV	$8.001 \times 10^5$	2.954	0.659	0.948	0.341	4.902	$2.196 \times 10^5$	
1.00 TeV	$1.000 \times 10^6$	2.980	0.841	1.212	0.428	5.461	$2.583 \times 10^5$	
1.19 TeV	$1.195 \times 10^6$	3.000	1.019	1.466	0.515	6.000	<i>Muon critical energy</i>	
1.40 TeV	$1.400 \times 10^6$	3.018	1.209	1.738	0.607	6.572	$3.250 \times 10^5$	
2.00 TeV	$2.000 \times 10^6$	3.059	1.774	2.544	0.879	8.257	$4.063 \times 10^5$	
3.00 TeV	$3.000 \times 10^6$	3.106	2.723	3.887	1.347	11.064	$5.105 \times 10^5$	
4.00 TeV	$4.000 \times 10^6$	3.141	3.688	5.250	1.823	13.903	$5.910 \times 10^5$	
8.00 TeV	$8.000 \times 10^6$	3.225	7.602	10.741	3.807	25.375	$8.009 \times 10^5$	
10.0 TeV	$1.000 \times 10^7$	3.252	9.582	13.508	4.829	31.172	$8.719 \times 10^5$	
14.0 TeV	$1.400 \times 10^7$	3.294	13.534	19.019	6.936	42.785	$9.810 \times 10^5$	
20.0 TeV	$2.000 \times 10^7$	3.340	19.515	27.334	10.175	60.364	$1.098 \times 10^6$	
30.0 TeV	$3.000 \times 10^7$	3.392	29.475	41.167	15.798	89.833	$1.233 \times 10^6$	
40.0 TeV	$4.000 \times 10^7$	3.430	39.492	55.046	21.570	119.539	$1.330 \times 10^6$	
80.0 TeV	$8.000 \times 10^7$	3.523	79.640	110.613	45.811	239.587	$1.561 \times 10^6$	
100. TeV	$1.000 \times 10^8$	3.554	99.763	138.430	58.382	300.129	$1.636 \times 10^6$	