

## Muons in polyvinyl alcohol [(C<sub>2</sub>H<sub>3</sub>-O-H)<sub>n</sub>]

$\langle Z/A \rangle$	$\rho$ [g/cm <sup>3</sup> ]	$I$ [eV]	$a$	$k = m_s$	$x_0$	$x_1$	$\bar{C}$	$\delta_0$
0.54480	1.300	69.7	0.11178	3.3893	0.1401	2.6315	3.1115	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	$4.704 \times 10^1$	7.891				7.891	$6.999 \times 10^{-1}$	
14.0 MeV	$5.616 \times 10^1$	6.153				6.153	$1.280 \times 10^0$	
20.0 MeV	$6.802 \times 10^1$	4.804				4.804	$2.396 \times 10^0$	
30.0 MeV	$8.509 \times 10^1$	3.726				3.726	$4.793 \times 10^0$	
40.0 MeV	$1.003 \times 10^2$	3.181				3.181	$7.717 \times 10^0$	
80.0 MeV	$1.527 \times 10^2$	2.383				2.384	$2.270 \times 10^1$	
100. MeV	$1.764 \times 10^2$	2.231				2.232	$3.140 \times 10^1$	
140. MeV	$2.218 \times 10^2$	2.076				2.076	$5.007 \times 10^1$	
200. MeV	$2.868 \times 10^2$	1.986				1.986	$7.974 \times 10^1$	
300. MeV	$3.917 \times 10^2$	1.950			0.000	1.950	$1.307 \times 10^2$	
324. MeV	$4.161 \times 10^2$	1.949			0.000	1.949	<i>Minimum ionization</i>	
400. MeV	$4.945 \times 10^2$	1.955			0.000	1.955	$1.820 \times 10^2$	
800. MeV	$8.995 \times 10^2$	2.026	0.000		0.000	2.026	$3.830 \times 10^2$	
1.00 GeV	$1.101 \times 10^3$	2.059	0.000		0.000	2.059	$4.809 \times 10^2$	
1.40 GeV	$1.502 \times 10^3$	2.112	0.000		0.001	2.113	$6.725 \times 10^2$	
2.00 GeV	$2.103 \times 10^3$	2.172	0.001	0.000	0.001	2.173	$9.523 \times 10^2$	
3.00 GeV	$3.104 \times 10^3$	2.239	0.001	0.001	0.001	2.242	$1.405 \times 10^3$	
4.00 GeV	$4.104 \times 10^3$	2.286	0.001	0.001	0.002	2.291	$1.846 \times 10^3$	
8.00 GeV	$8.105 \times 10^3$	2.395	0.003	0.003	0.004	2.405	$3.545 \times 10^3$	
10.0 GeV	$1.011 \times 10^4$	2.428	0.004	0.004	0.005	2.441	$4.370 \times 10^3$	
14.0 GeV	$1.411 \times 10^4$	2.475	0.006	0.007	0.007	2.496	$5.990 \times 10^3$	
20.0 GeV	$2.011 \times 10^4$	2.524	0.010	0.011	0.009	2.555	$8.364 \times 10^3$	
30.0 GeV	$3.011 \times 10^4$	2.576	0.017	0.020	0.014	2.627	$1.222 \times 10^4$	
40.0 GeV	$4.011 \times 10^4$	2.612	0.023	0.030	0.018	2.683	$1.599 \times 10^4$	
80.0 GeV	$8.011 \times 10^4$	2.694	0.053	0.072	0.034	2.854	$3.042 \times 10^4$	
100. GeV	$1.001 \times 10^5$	2.720	0.069	0.095	0.043	2.927	$3.734 \times 10^4$	
140. GeV	$1.401 \times 10^5$	2.758	0.102	0.142	0.059	3.062	$5.070 \times 10^4$	
200. GeV	$2.001 \times 10^5$	2.798	0.154	0.218	0.084	3.254	$6.969 \times 10^4$	
300. GeV	$3.001 \times 10^5$	2.843	0.244	0.347	0.126	3.560	$9.906 \times 10^4$	
400. GeV	$4.001 \times 10^5$	2.875	0.337	0.481	0.168	3.861	$1.260 \times 10^5$	
800. GeV	$8.001 \times 10^5$	2.953	0.723	1.041	0.339	5.056	$2.163 \times 10^5$	
1.00 TeV	$1.000 \times 10^6$	2.978	0.923	1.330	0.426	5.658	$2.536 \times 10^5$	
1.11 TeV	$1.108 \times 10^6$	2.990	1.031	1.485	0.474	5.980	<i>Muon critical energy</i>	
1.40 TeV	$1.400 \times 10^6$	3.017	1.326	1.906	0.604	6.854	$3.178 \times 10^5$	
2.00 TeV	$2.000 \times 10^6$	3.058	1.946	2.789	0.875	8.668	$3.955 \times 10^5$	
3.00 TeV	$3.000 \times 10^6$	3.106	2.984	4.260	1.340	11.691	$4.945 \times 10^5$	
4.00 TeV	$4.000 \times 10^6$	3.140	4.041	5.751	1.814	14.747	$5.705 \times 10^5$	
8.00 TeV	$8.000 \times 10^6$	3.225	8.323	11.759	3.788	27.095	$7.676 \times 10^5$	
10.0 TeV	$1.000 \times 10^7$	3.253	10.490	14.785	4.804	33.332	$8.341 \times 10^5$	
14.0 TeV	$1.400 \times 10^7$	3.295	14.813	20.815	6.899	45.822	$9.360 \times 10^5$	
20.0 TeV	$2.000 \times 10^7$	3.341	21.354	29.910	10.119	64.725	$1.046 \times 10^6$	
30.0 TeV	$3.000 \times 10^7$	3.394	32.247	45.043	15.709	96.393	$1.171 \times 10^6$	
40.0 TeV	$4.000 \times 10^7$	3.432	43.200	60.225	21.447	128.304	$1.261 \times 10^6$	
80.0 TeV	$8.000 \times 10^7$	3.526	87.118	121.006	45.535	257.184	$1.477 \times 10^6$	
100. TeV	$1.000 \times 10^8$	3.557	109.135	151.433	58.024	322.149	$1.546 \times 10^6$	