

**Table 213: Muons in Paraffin ( $\text{CH}_3(\text{CH}_2)_{n \approx 23}\text{CH}_3$ )**

	$\langle Z/A \rangle$	$\rho$ [g/cm <sup>3</sup> ]	$I$ [eV]	$a$	$k = m_s$	$x_0$	$x_1$	$\bar{C}$	$\delta_0$
	0.57275	0.930	55.9	0.12087	3.4288	0.1289	2.5084	2.9551	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	$4.704 \times 10^1$	8.531				8.531	$6.462 \times 10^{-1}$		
14.0 MeV	$5.616 \times 10^1$	6.645				6.645	$1.183 \times 10^0$		
20.0 MeV	$6.802 \times 10^1$	5.183				5.183	$2.217 \times 10^0$		
30.0 MeV	$8.509 \times 10^1$	4.015				4.015	$4.440 \times 10^0$		
40.0 MeV	$1.003 \times 10^2$	3.426				3.426	$7.154 \times 10^0$		
80.0 MeV	$1.527 \times 10^2$	2.561				2.561	$2.108 \times 10^1$		
100. MeV	$1.764 \times 10^2$	2.397				2.397	$2.917 \times 10^1$		
140. MeV	$2.218 \times 10^2$	2.228				2.228	$4.657 \times 10^1$		
200. MeV	$2.868 \times 10^2$	2.130				2.130	$7.422 \times 10^1$		
300. MeV	$3.917 \times 10^2$	2.089			0.000	2.089	$1.218 \times 10^2$		
328. MeV	$4.211 \times 10^2$	2.088			0.000	2.088	<i>Minimum ionization</i>		
400. MeV	$4.945 \times 10^2$	2.092			0.000	2.093	$1.696 \times 10^2$		
800. MeV	$8.995 \times 10^2$	2.164	0.000		0.000	2.164	$3.577 \times 10^2$		
1.00 GeV	$1.101 \times 10^3$	2.198	0.000		0.000	2.198	$4.494 \times 10^2$		
1.40 GeV	$1.502 \times 10^3$	2.253	0.000		0.001	2.254	$6.290 \times 10^2$		
2.00 GeV	$2.103 \times 10^3$	2.314	0.000	0.000	0.001	2.315	$8.914 \times 10^2$		
3.00 GeV	$3.104 \times 10^3$	2.384	0.001	0.000	0.001	2.386	$1.316 \times 10^3$		
4.00 GeV	$4.104 \times 10^3$	2.432	0.001	0.001	0.002	2.436	$1.731 \times 10^3$		
8.00 GeV	$8.105 \times 10^3$	2.544	0.003	0.003	0.004	2.554	$3.330 \times 10^3$		
10.0 GeV	$1.011 \times 10^4$	2.578	0.004	0.004	0.005	2.591	$4.107 \times 10^3$		
14.0 GeV	$1.411 \times 10^4$	2.628	0.006	0.006	0.007	2.647	$5.634 \times 10^3$		
20.0 GeV	$2.011 \times 10^4$	2.678	0.009	0.010	0.009	2.707	$7.874 \times 10^3$		
30.0 GeV	$3.011 \times 10^4$	2.733	0.015	0.018	0.014	2.779	$1.152 \times 10^4$		
40.0 GeV	$4.011 \times 10^4$	2.771	0.021	0.026	0.018	2.836	$1.508 \times 10^4$		
80.0 GeV	$8.011 \times 10^4$	2.857	0.047	0.063	0.035	3.003	$2.876 \times 10^4$		
100. GeV	$1.001 \times 10^5$	2.884	0.061	0.083	0.043	3.072	$3.535 \times 10^4$		
140. GeV	$1.401 \times 10^5$	2.924	0.090	0.126	0.060	3.200	$4.810 \times 10^4$		
200. GeV	$2.001 \times 10^5$	2.966	0.136	0.193	0.085	3.380	$6.633 \times 10^4$		
300. GeV	$3.001 \times 10^5$	3.014	0.216	0.307	0.127	3.664	$9.473 \times 10^4$		
400. GeV	$4.001 \times 10^5$	3.048	0.298	0.426	0.170	3.942	$1.210 \times 10^5$		
800. GeV	$8.001 \times 10^5$	3.130	0.642	0.923	0.343	5.038	$2.106 \times 10^5$		
1.00 TeV	$1.000 \times 10^6$	3.156	0.821	1.181	0.431	5.588	$2.482 \times 10^5$		
1.29 TeV	$1.288 \times 10^6$	3.187	1.078	1.548	0.560	6.374	<i>Muon critical energy</i>		
1.40 TeV	$1.400 \times 10^6$	3.197	1.180	1.693	0.611	6.681	$3.136 \times 10^5$		
2.00 TeV	$2.000 \times 10^6$	3.240	1.733	2.481	0.885	8.339	$3.939 \times 10^5$		
3.00 TeV	$3.000 \times 10^6$	3.291	2.661	3.791	1.356	11.099	$4.975 \times 10^5$		
4.00 TeV	$4.000 \times 10^6$	3.327	3.605	5.122	1.835	13.889	$5.779 \times 10^5$		
8.00 TeV	$8.000 \times 10^6$	3.416	7.437	10.482	3.833	25.169	$7.888 \times 10^5$		
10.0 TeV	$1.000 \times 10^7$	3.445	9.378	13.183	4.863	30.869	$8.604 \times 10^5$		
14.0 TeV	$1.400 \times 10^7$	3.489	13.250	18.564	6.986	42.289	$9.707 \times 10^5$		
20.0 TeV	$2.000 \times 10^7$	3.537	19.113	26.682	10.248	59.581	$1.090 \times 10^6$		
30.0 TeV	$3.000 \times 10^7$	3.593	28.878	40.187	15.916	88.574	$1.227 \times 10^6$		
40.0 TeV	$4.000 \times 10^7$	3.633	38.701	53.737	21.735	117.806	$1.324 \times 10^6$		
80.0 TeV	$8.000 \times 10^7$	3.732	78.084	107.986	46.181	235.983	$1.559 \times 10^6$		
100. TeV	$1.000 \times 10^8$	3.764	97.828	135.145	58.862	295.599	$1.635 \times 10^6$		