

**Table 177: Muons in n-Heptane C<sub>7</sub>H<sub>16</sub>**

	$\langle Z/A \rangle$	$\rho$ [g/cm <sup>3</sup> ]	$I$ [eV]	$a$	$k = m_s$	$x_0$	$x_1$	$\bar{C}$	$\delta_0$
	0.57992	0.684	54.4	0.11255	3.4885	0.1928	2.5706	3.1978	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	$4.704 \times 10^1$	8.667				8.667	$6.359 \times 10^{-1}$		
14.0 MeV	$5.616 \times 10^1$	6.750				6.750	$1.164 \times 10^0$		
20.0 MeV	$6.802 \times 10^1$	5.264				5.264	$2.183 \times 10^0$		
30.0 MeV	$8.509 \times 10^1$	4.078				4.078	$4.371 \times 10^0$		
40.0 MeV	$1.003 \times 10^2$	3.479				3.479	$7.044 \times 10^0$		
80.0 MeV	$1.527 \times 10^2$	2.606				2.606	$2.076 \times 10^1$		
100. MeV	$1.764 \times 10^2$	2.444				2.444	$2.870 \times 10^1$		
140. MeV	$2.218 \times 10^2$	2.274				2.274	$4.574 \times 10^1$		
200. MeV	$2.868 \times 10^2$	2.175				2.175	$7.283 \times 10^1$		
300. MeV	$3.917 \times 10^2$	2.134			0.000	2.135	$1.194 \times 10^2$		
328. MeV	$4.211 \times 10^2$	2.133			0.000	2.134	<i>Minimum ionization</i>		
400. MeV	$4.945 \times 10^2$	2.139			0.000	2.139	$1.662 \times 10^2$		
800. MeV	$8.995 \times 10^2$	2.213	0.000		0.000	2.213	$3.502 \times 10^2$		
1.00 GeV	$1.101 \times 10^3$	2.247	0.000		0.000	2.248	$4.398 \times 10^2$		
1.40 GeV	$1.502 \times 10^3$	2.304	0.000		0.001	2.305	$6.154 \times 10^2$		
2.00 GeV	$2.103 \times 10^3$	2.367	0.000	0.000	0.001	2.368	$8.720 \times 10^2$		
3.00 GeV	$3.104 \times 10^3$	2.438	0.001	0.000	0.001	2.441	$1.287 \times 10^3$		
4.00 GeV	$4.104 \times 10^3$	2.488	0.001	0.001	0.002	2.492	$1.693 \times 10^3$		
8.00 GeV	$8.105 \times 10^3$	2.602	0.003	0.003	0.004	2.611	$3.256 \times 10^3$		
10.0 GeV	$1.011 \times 10^4$	2.637	0.004	0.004	0.005	2.649	$4.016 \times 10^3$		
14.0 GeV	$1.411 \times 10^4$	2.687	0.006	0.006	0.007	2.706	$5.510 \times 10^3$		
20.0 GeV	$2.011 \times 10^4$	2.738	0.009	0.010	0.009	2.767	$7.701 \times 10^3$		
30.0 GeV	$3.011 \times 10^4$	2.794	0.014	0.018	0.014	2.840	$1.127 \times 10^4$		
40.0 GeV	$4.011 \times 10^4$	2.832	0.020	0.026	0.018	2.896	$1.475 \times 10^4$		
80.0 GeV	$8.011 \times 10^4$	2.919	0.047	0.063	0.035	3.064	$2.816 \times 10^4$		
100. GeV	$1.001 \times 10^5$	2.947	0.061	0.083	0.043	3.134	$3.461 \times 10^4$		
140. GeV	$1.401 \times 10^5$	2.987	0.090	0.125	0.060	3.262	$4.711 \times 10^4$		
200. GeV	$2.001 \times 10^5$	3.030	0.136	0.191	0.085	3.442	$6.501 \times 10^4$		
300. GeV	$3.001 \times 10^5$	3.078	0.215	0.305	0.128	3.725	$9.292 \times 10^4$		
400. GeV	$4.001 \times 10^5$	3.112	0.297	0.424	0.170	4.003	$1.188 \times 10^5$		
800. GeV	$8.001 \times 10^5$	3.195	0.639	0.918	0.343	5.096	$2.071 \times 10^5$		
1.00 TeV	$1.000 \times 10^6$	3.222	0.817	1.175	0.431	5.645	$2.444 \times 10^5$		
1.32 TeV	$1.319 \times 10^6$	3.256	1.101	1.580	0.575	6.512	<i>Muon critical energy</i>		
1.40 TeV	$1.400 \times 10^6$	3.263	1.174	1.685	0.612	6.734	$3.092 \times 10^5$		
2.00 TeV	$2.000 \times 10^6$	3.307	1.725	2.468	0.886	8.386	$3.889 \times 10^5$		
3.00 TeV	$3.000 \times 10^6$	3.358	2.648	3.773	1.358	11.137	$4.921 \times 10^5$		
4.00 TeV	$4.000 \times 10^6$	3.395	3.589	5.097	1.838	13.919	$5.722 \times 10^5$		
8.00 TeV	$8.000 \times 10^6$	3.485	7.406	10.432	3.838	25.161	$7.830 \times 10^5$		
10.0 TeV	$1.000 \times 10^7$	3.514	9.338	13.120	4.869	30.842	$8.547 \times 10^5$		
14.0 TeV	$1.400 \times 10^7$	3.559	13.195	18.476	6.995	42.226	$9.651 \times 10^5$		
20.0 TeV	$2.000 \times 10^7$	3.608	19.035	26.556	10.263	59.462	$1.084 \times 10^6$		
30.0 TeV	$3.000 \times 10^7$	3.664	28.762	39.997	15.939	88.362	$1.221 \times 10^6$		
40.0 TeV	$4.000 \times 10^7$	3.705	38.547	53.483	21.767	117.503	$1.319 \times 10^6$		
80.0 TeV	$8.000 \times 10^7$	3.805	77.782	107.477	46.253	235.317	$1.555 \times 10^6$		
100. TeV	$1.000 \times 10^8$	3.838	97.453	134.508	58.955	294.753	$1.631 \times 10^6$		