

**Table 118: Muons in Blood (ICRP)**

	$\langle Z/A \rangle$	$\rho$ [g/cm <sup>3</sup> ]	$I$ [eV]	$a$	$k = m_s$	$x_0$	$x_1$	$\bar{C}$	$\delta_0$
	0.54995	1.060	75.2	0.08492	3.5406	0.2239	2.8017	3.4581	0.00
$T$	$p$ [MeV/c]	Ionization	Brems	Pair prod	Photonucl	Total	CSDA range [g/cm <sup>2</sup> ]		
				[MeV cm <sup>2</sup> /g]					
10.0 MeV	$4.704 \times 10^1$	7.888				7.888	$7.006 \times 10^{-1}$		
14.0 MeV	$5.616 \times 10^1$	6.153				6.153	$1.281 \times 10^0$		
20.0 MeV	$6.802 \times 10^1$	4.806				4.806	$2.397 \times 10^0$		
30.0 MeV	$8.509 \times 10^1$	3.728				3.728	$4.793 \times 10^0$		
40.0 MeV	$1.003 \times 10^2$	3.184				3.184	$7.714 \times 10^0$		
80.0 MeV	$1.527 \times 10^2$	2.390				2.390	$2.268 \times 10^1$		
100. MeV	$1.764 \times 10^2$	2.248				2.248	$3.133 \times 10^1$		
140. MeV	$2.218 \times 10^2$	2.094				2.094	$4.985 \times 10^1$		
200. MeV	$2.868 \times 10^2$	2.005				2.006	$7.924 \times 10^1$		
300. MeV	$3.917 \times 10^2$	1.972			0.000	1.972	$1.297 \times 10^2$		
318. MeV	$4.105 \times 10^2$	1.971			0.000	1.971	<i>Minimum ionization</i>		
400. MeV	$4.945 \times 10^2$	1.978			0.000	1.978	$1.804 \times 10^2$		
800. MeV	$8.995 \times 10^2$	2.053	0.000		0.000	2.053	$3.789 \times 10^2$		
1.00 GeV	$1.101 \times 10^3$	2.087	0.000		0.000	2.087	$4.755 \times 10^2$		
1.40 GeV	$1.502 \times 10^3$	2.142	0.000		0.001	2.143	$6.645 \times 10^2$		
2.00 GeV	$2.103 \times 10^3$	2.203	0.001	0.000	0.001	2.205	$9.402 \times 10^2$		
3.00 GeV	$3.104 \times 10^3$	2.273	0.001	0.001	0.001	2.276	$1.386 \times 10^3$		
4.00 GeV	$4.104 \times 10^3$	2.321	0.001	0.001	0.002	2.326	$1.820 \times 10^3$		
8.00 GeV	$8.105 \times 10^3$	2.432	0.004	0.003	0.004	2.443	$3.493 \times 10^3$		
10.0 GeV	$1.011 \times 10^4$	2.466	0.005	0.005	0.005	2.480	$4.306 \times 10^3$		
14.0 GeV	$1.411 \times 10^4$	2.514	0.007	0.008	0.007	2.536	$5.900 \times 10^3$		
20.0 GeV	$2.011 \times 10^4$	2.564	0.011	0.013	0.009	2.597	$8.236 \times 10^3$		
30.0 GeV	$3.011 \times 10^4$	2.617	0.018	0.023	0.013	2.671	$1.203 \times 10^4$		
40.0 GeV	$4.011 \times 10^4$	2.653	0.026	0.033	0.018	2.730	$1.573 \times 10^4$		
80.0 GeV	$8.011 \times 10^4$	2.736	0.060	0.080	0.034	2.910	$2.990 \times 10^4$		
100. GeV	$1.001 \times 10^5$	2.762	0.077	0.106	0.042	2.987	$3.668 \times 10^4$		
140. GeV	$1.401 \times 10^5$	2.800	0.114	0.159	0.059	3.132	$4.975 \times 10^4$		
200. GeV	$2.001 \times 10^5$	2.841	0.172	0.243	0.084	3.339	$6.830 \times 10^4$		
300. GeV	$3.001 \times 10^5$	2.886	0.271	0.386	0.125	3.669	$9.685 \times 10^4$		
400. GeV	$4.001 \times 10^5$	2.919	0.374	0.535	0.167	3.995	$1.230 \times 10^5$		
800. GeV	$8.001 \times 10^5$	2.997	0.803	1.156	0.337	5.294	$2.096 \times 10^5$		
1.00 TeV	$1.000 \times 10^6$	3.023	1.025	1.477	0.424	5.949	$2.453 \times 10^5$		
1.03 TeV	$1.032 \times 10^6$	3.027	1.061	1.528	0.438	6.054	<i>Muon critical energy</i>		
1.40 TeV	$1.400 \times 10^6$	3.062	1.472	2.115	0.601	7.250	$3.061 \times 10^5$		
2.00 TeV	$2.000 \times 10^6$	3.104	2.158	3.093	0.870	9.225	$3.793 \times 10^5$		
3.00 TeV	$3.000 \times 10^6$	3.152	3.309	4.721	1.333	12.515	$4.720 \times 10^5$		
4.00 TeV	$4.000 \times 10^6$	3.187	4.479	6.372	1.803	15.841	$5.429 \times 10^5$		
8.00 TeV	$8.000 \times 10^6$	3.272	9.219	13.021	3.764	29.276	$7.258 \times 10^5$		
10.0 TeV	$1.000 \times 10^7$	3.300	11.616	16.369	4.774	36.060	$7.873 \times 10^5$		
14.0 TeV	$1.400 \times 10^7$	3.343	16.401	23.042	6.856	49.641	$8.815 \times 10^5$		
20.0 TeV	$2.000 \times 10^7$	3.389	23.638	33.105	10.053	70.186	$9.826 \times 10^5$		
30.0 TeV	$3.000 \times 10^7$	3.442	35.689	49.850	15.604	104.585	$1.099 \times 10^6$		
40.0 TeV	$4.000 \times 10^7$	3.481	47.805	66.648	21.301	139.234	$1.181 \times 10^6$		
80.0 TeV	$8.000 \times 10^7$	3.575	96.402	133.898	45.210	279.085	$1.380 \times 10^6$		
100. TeV	$1.000 \times 10^8$	3.607	120.770	167.562	57.604	349.543	$1.444 \times 10^6$		